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DEPARTMENT OF THE INTERIOR

DRAFT
ENVIRONMENTAL STATEMENT

SNAKE RIVER
BIRDS OF PREY NATIONAL CONSERVATION AREA

Prepared By

BUREAU OF LAND MANAGEMENT
DEPARTMENT OF THE INTERIOR


State Director, Idaho

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SUMMARY

(X) Draft

() Final Environmental Statement

Department of the Interior
Bureau of Land Management

1. Type of Action () Administrative (X) Legislative

2. Brief Description of Action: The Bureau of Land Management proposal recommends that 515,257 acres of public land in Ada, Canyon, Elmore and Owyhee counties, Idaho, be designated by Congress as the Snake River Birds of Prey National Conservation Area; that Congress remove these lands from mineral entry under the 1872 Mining Law; that these lands be removed from application under the Desert Land, Carey, and the State of Idaho Admissions Act; and that leases under the Mineral Leasing or Geothermal Stream Act be allowed only as provided in a land use plan developed under the authority of the Federal Land Policy and Management Act (FLPMA) of 1976.

3. Summary of Environmental Impacts and Adverse Environmental Effects: The proposed designation would result in retaining 515,257 acres of public land in public ownership; it would provide for the protection, maintenance and perpetuation of the birds of prey, including the endangered bald eagle and peregrine falcon; it would provide for the protection and maintenance of the existing ecological, geological, scientific, educational, historic, outdoor recreation, wildlife, livestock grazing, and esthetic values of these undeveloped public lands. It would also provide for continued use of 122,600 acres of public land by the Idaho National Guard for maneuver purposes.

This proposal would also result in the loss of a future opportunity for: 1) farm development under the Desert Land and Carey Acts; 2) selection of public lands by the State of Idaho under the Idaho Admissions Act; and 3) mineral entry and patent as presently known under the 1872 Mining Laws.

4. Alternatives Considered: A) no action; B) modification of the proposed Conservation Area boundary; and C) withdrawal of the proposed Snake River Birds of Prey National Conservation Area under Section 204 of FLPMA.

5. Comments Have Been Requested From The Following: see attached page.

6. Date Statement Made Available to EPA and the Public:

Draft:

Final:

ATTACHMENT

COORDINATION IN THE REVIEW OF THE DRAFT ES

Comments on the draft environmental statement will be requested from the following agencies and interest groups:

Federal

Advisory Council on Historic Preservation
Department of Agriculture
 Agricultural Research Service
 Soil Conservation Service
Department of Commerce
Department of Health, Education and Welfare
Department of Housing and Urban Development
Department of the Interior
 Bureau of Mines
 Bureau of Reclamation
 Fish and Wildlife Service
 Geological Survey
 Heritage Conservation and Recreation Service
 National Park Service
Environmental Protection Agency
Federal Power Commission

State

State of Idaho
 Governor's Clearinghouse

Local

Ada County Commissioners
Ada County Planning and Zoning Commission
Canyon County Commissioners
Canyon County Planning and Zoning Commission
Elmore County Commissioners
Elmore County Planning and Zoning Commission
Owyhee County Commissioners
Owyhee County Planning and Zoning Commission

Nongovernmental Organizations

Ada County Fish and Game League
American Association of University Women
Audubon Society
Boise Riding Club
Capital Conservation Club
Carey Act Association of Idaho

ATTACHMENT (continued)

Citizens Alliance
Coalition to Save the Snake
Friends of the Earth
Gem State 4-Wheel Drive Club
Greater Snake River Land Use Congress
Idaho Archaeological Society
Idaho Association of Soil Conservation Districts
Idaho Cattlemens Association
Idaho Conservation League
Idaho Environmental Council
Idaho Farm Bureau Federation
Idaho Federation of Garden Clubs
Idaho Gem Club
Idaho Historical Society
Idaho League of Women Voters
Idaho Mining Association
Idaho Motorcycle Association
Idaho Outdoor Association
Idaho Water Users Association
Idaho Wildlife Federation
Idaho Woolgrowers Association
Mountain Home Air Force Base Sportsmen Club
Nampa Rod and Gun Club
National Wildlife Federation
National Trust for Historic Preservation
Nature Conservancy
Off Road Motorcyclists Council
Oregon High Desert Study Group
Outdoors Unlimited
Peregrine Fund
Sierra Club
Southwest Idaho Development Association
Snake River Conservation Research Center
Snake River Regional Studies Center
WETA of Idaho
Wildlife Federation
Wildlife Society

Other

Senator Frank Church
Senator James McClure
Congressman Steve Symmes
Congressman George Hansen

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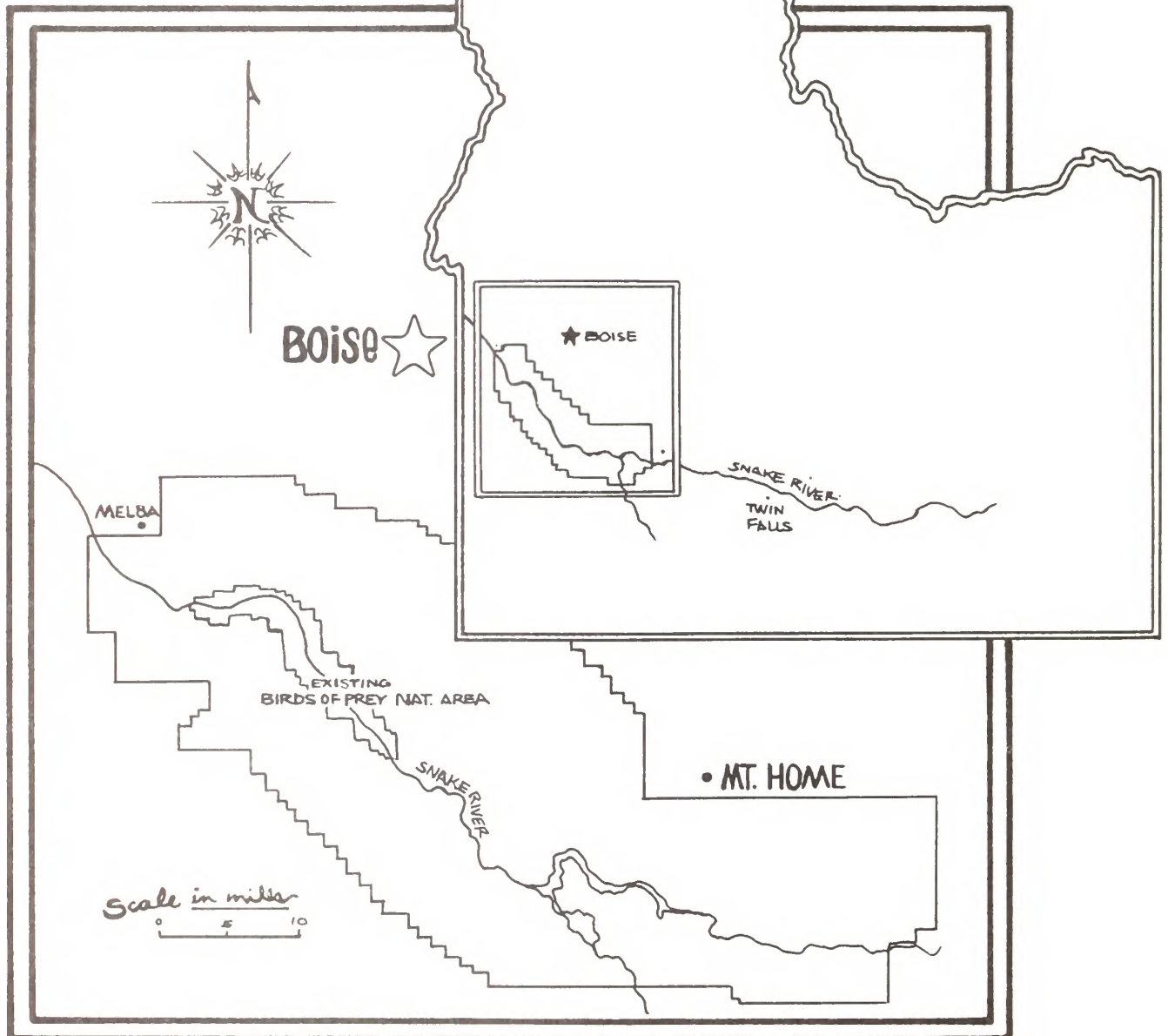
CHAPTER 1

DESCRIPTION OF THE PROPOSED ACTION



Birds of Prey

CONSERVATION AREA LOCATION MAP



CHAPTER 1

INTRODUCTION

Just 30 miles south of Boise, Idaho, amidst the sheer basalt cliffs of the Snake River Canyon that interrupt the adjacent sagebrush desert, is the densest known nesting population of eagles, hawks, falcons, owls, and other birds of prey in North America. Over 600 pairs of 15 species of birds of prey ((including 128 pairs of ravens) return to the canyon each year to breed and rear their young. Included are 209 pairs of prairie falcons, (representing perhaps four to five percent of the entire nesting population of the species), 34 pairs of golden eagles, along with kestrels, great horned owls, screech owls, barn owls, burrowing owls, long-eared owls, red-tailed hawks, ferruginous hawks, Swainson's hawks, marsh hawks, ravens, and turkey vultures (See Appendix A for scientific names).

Since the late 1940's, when the quality of this wildlife resource was first recognized, this area has gained national prominence and international acclaim (Olendorff and Kochert 1977). On October 12, 1971, 26,714 acres of public land were withdrawn under Public Land Order Number 5133. Rogers C.B. Morton, then Secretary of the Interior, dedicated these lands as the Snake River Birds of Prey Natural Area (hereafter "Natural Area") for the protection of raptor nesting and wintering habitat. Thirty-three miles of river canyon and cliffs were thus protected.

During the fall of 1972, the Bureau of Land Management (BLM) initiated a year-round comprehensive study of all raptors in the Natural Area to gather basic information for the management of their populations and habitats. Researchers subsequently determined that the original 26,714 acres encompassed only a portion of the major nesting habitat and very little of the hunting territory used by the raptors. It was also evident that every year more land was being planted to crops under public land disposal laws, specifically the Desert Land Act and the Carey Act (see Glossary for a description of these laws). Intensive farming destroys jackrabbit and ground squirrel habitat. Research investigations found no jackrabbits or ground squirrels in these new farmlands. With each new conversion of native rangeland to irrigated farm, the populations of these important raptor prey species continued to decrease.

In 1975 the BLM issued a temporary moratorium on processing Desert Land and Carey Act applications for 278,227 acres of public land adjacent to the Natural Area and to an additional 40 miles of river canyon upstream from the Natural Area (Table 1-1). This new addition is known as the Natural Area extension. All of these lands--the Birds of Prey Study Area--were considered to be significant habitat for raptors and their prey. It was essential to keep them in a natural state while the BLM research project proceeded.

In 1977 the studies showed that the raptors were using even more desert land for their hunting areas. As a result, the Secretary of the Interior issued a directive on September 29, 1977, for the BLM and the Bureau of Reclamation to establish a new study area boundary (including an additional 234,025 acres (Table 1-1)) based on current research findings.

TABLE 1-1
Land Status In the Birds of Prey Study Area*

<u>Action</u>	<u>Public</u>	<u>Private</u>	<u>State</u>	<u>Total</u>
1971 Birds of Prey Natural Area Withdrawal	26,714	4,683	831	32,228
1975 BLM Administrative Moratorium	278,227	156,842	17,357	452,426
1977 Expansion by the Secretary of the Interior	234,025	76,589	37,747	348,361
<hr/>				
TOTAL	538,966	238,114	55,935	833,015
<hr/>				

* BLM jurisdiction applies only to public lands.

These agencies were directed to suspend all actions in the expanded study area that might conflict with or in any way jeopardize the raptor prey habitat until such time as a permanent boundary for protection could be established and a management plan for the land could be implemented. Those land uses that do not conflict with use of the area by birds of prey could still be allowed. The Secretary also directed the two agencies to develop, by June 1979, alternatives (including proposed legislation) which would permanently protect the lands necessary to meet the objectives of the Conservation Area (see below).

The intensive research is now complete; data have been computerized and analyzed. Final research recommendations place a boundary around the

land necessary to protect and maintain the present density of birds of prey. Formal establishment of this boundary and implementation of related recommendations are the subject of this environmental statement.

PROPOSED ACTION

The BLM proposes that 81 miles of the Snake River Canyon and about 515,257 acres of adjacent public land in Ada, Canyon, Elmore, and Owyhee counties, Idaho, be designated by Act of Congress as the Snake River Birds of Prey National Conservation Area (hereafter "proposed Conservation Area"). The most expedient method would be to amend Title VI of the Federal Land Policy and Management Act of 1976 (FLPMA) (P.L. 94-579). The area would continue to be managed in accordance with the existing "Management Plan for the Proposed Birds of Prey National Conservation Area" (BLM, Boise District, October 30, 1978) until a thorough update and revision is finalized as soon as practicable after enactment of the enabling legislation.

If implemented, this proposal would prohibit mineral entry, location, and patent under the 1872 Mining Law (subject to existing valid rights). The proposal would also remove these public lands from application, selection, entry, or patent under the Desert Land Act, the Carey Act, and the State of Idaho Admission Act. However, the Secretary of the Interior could still 1) issue leases under the Mineral Leasing Act (41 Stat 437; 30 USC 181 et. seq.) or Geothermal Steam Act (84 Stat 1566; 30 USC 1001-1025); 2) lease locatable minerals which would ordinarily be disposed of under The 1872 Mining Law; 3) enter into cooperative agreements with the State of Idaho for continued National Guard use of

some of these lands, as provided in the land-use plan developed for the area under Section 202 of FLPMA; and 4) continue issuance of livestock grazing permits or other use permits that would not result in a degradation of raptor populations or habitats. All leases, permits, and agreements would contain any stipulations and/or conditions that the Secretary of the Interior deems necessary to protect and maintain the raptor habitat, as well as the scenic, scientific, and environmental values. In addition, the proposed Conservation Area designation would in no way change the responsibilities of the BLM to protect cultural values, threatened or endangered species, or other scarce resources.

Objectives

Objectives for the management of the proposed Conservation Area are as follows:

- *To protect and maintain a complete ecosystem which includes a unique and fragile combination of desert, river, and volcanic cliff complex and which supports and maintains the highest known density of nesting raptors in North America.*
- *To protect and maintain the raptors, their habitat, and the scenic, archaeological, educational, recreational, and other values associated with the involved public lands for public enjoyment and study in perpetuity.*

- *To update, revise, and continue implementation of a long-range multiple-use and sustained-yield management plan that emphasizes management and protection of raptor habitat, as well as the management and use of other natural resources.*

In accomplishing these objectives, the BLM will continue to work cooperatively with State agencies, other Federal agencies, and private or public organizations to manage, protect, and preserve this nationally and internationally significant wildlife resource. No single use will be permitted in the proposed Conservation Area that may jeopardize the continued existence of raptor populations at levels recorded for the Study Area (see Chapter 2) during the intensive BLM research (1976-1978 averages).

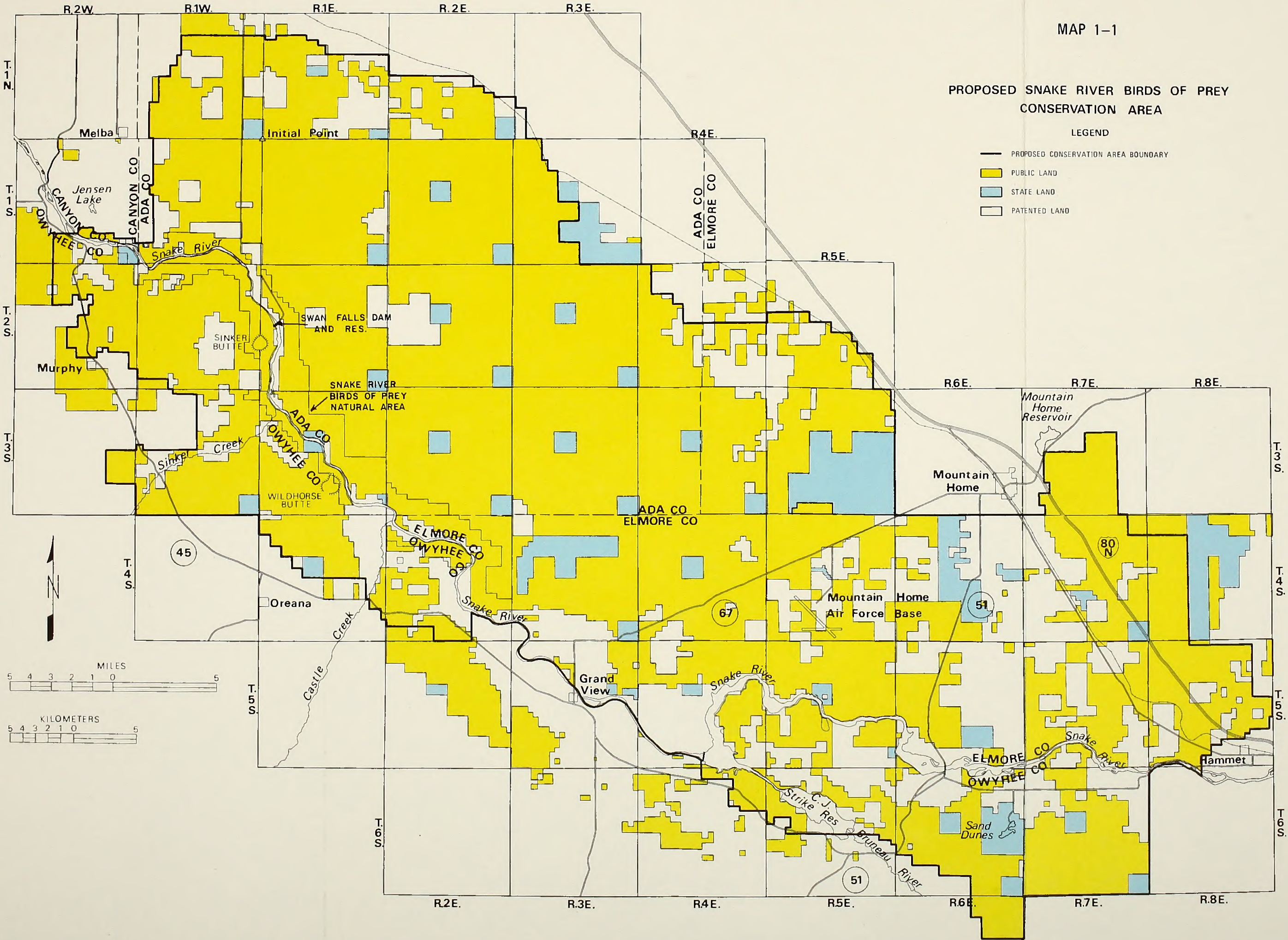
Boundary Proposal

Map 1-1 depicts the boundary of the proposed Conservation Area. Within this 719,914-acre area, 515,257 acres are federally owned and administered by the Bureau of Land Management, approximately 43,619 acres are State land, and 161,037 acres are in private ownership. None of these State and private lands are affected by the proposal. The proposed Conservation Area is significantly larger than the existing Natural Area (which comprises 32,228 acres including 5,514 acres of private and State lands), but it is 113,101 acres smaller than the expanded Study Area (see Table 1-1). This boundary is based primarily on the needs of the birds of prey as revealed by the intensive BLM research on holistic ecosystem management and protection principles as they relate to setting aside biological preserves.

PROPOSED SNAKE RIVER BIRDS OF PREY
CONSERVATION AREA

LEGEND

- PROPOSED CONSERVATION AREA BOUNDARY
- PUBLIC LAND
- STATE LAND
- PATENTED LAND



In general, the theories of setting aside preserves emphasize the importance of large reserves in protecting natural species diversity. Preserving large areas the size of the proposed Conservation Area helps to ensure ecosystem stability and minimizes extinction rates (Diamond 1975, 1976).

Whitcomb et al. (1976) summarizes the desirability of large preserves as follows:

"...the size of ecological preserves should be maximized because (i) large areas have high immigration rates and low extinction rates; (ii) some taxa require very large areas for survival; (iii) preservation of entire ecological communities, with all trophic levels represented, requires large areas; (iv) large preserves are better buffered against human perturbation and natural disaster; (v) large areas are necessary to minimize the pressures of predation, parasitism, and competition exerted by species abundant in the disturbed areas surrounding the reserves; (vi) failures of small reserves, originally considered adequate, have been amply documented; and (vii) the irreversibility of fragmentation demands a conservative preservation strategy."

With regard to the shape of reserves, Diamond (1975), Wilson and Willis (1975), and MacMahan (In Press) recommend a round reserve because of the high area to perimeter ratio of such a configuration. This shape should be less susceptible to outside influences and minimizes dispersal

distances within the reserve. Administrative and geographic considerations may dictate oblong or other shapes; in any case, however, blocks of land (such as the proposed Conservation Area) will function better as a preserve than long linear areas (such as the existing Natural Area) which do not encompass complete functional ecosystems. Each preserve ideally should contain self-sustaining populations.

The boundary proposal for the Conservation Area adheres closely to these theoretical considerations, as well as to the practical considerations (based on field observations) of designing the area to include natural assemblages of plant and animal species and mosaics of normal and successional stages. Reserves should present a "... reasonable facsimile of the entire functioning ecological community they are intended to represent" (Whitcomb et al. 1976). This is the first and foremost objective of the proposed Conservation Area (see above).

AUTHORIZING ACTION

The research findings, this environmental statement, and the draft legislation will be submitted to the President by the Secretary of the Interior. Then, after reviewing the documents, the President may make a recommendation to the Congress. The final decision to so amend the Federal Land Policy and Management Act rests with the Congress.

ADMINISTRATION AND MANAGEMENT

Management of BLM-administered lands in the proposed Conservation Area currently provides for: 1) protection and maintenance of the habitat conditions for wildlife, with emphasis on raptors; 2) protection of scenic, natural, historic, and other values that contribute to public use and enjoyment; 3) land uses (including recreation, livestock grazing, Idaho National Guard training exercises, etc.) which do not substantially interfere with meeting the objectives of the proposed Conservation Area; 4) management of public lands with wilderness characteristics in such a manner as not to impair their suitability for preservation as wilderness; and 5) management of public use through public education and cooperation, supplemented by law enforcement when necessary.

The management philosophy for this area is to permit a high level of multiple-use activities without directly or indirectly threatening the existence and/or natural functioning of the ecosystem and the resulting population densities and productivities of the nesting raptors. Management activities are presently conducted in accordance with the "Management Plan for the Proposed Birds of Prey National Conservation Area" (BLM, Boise District, October 30, 1978). This plan prescribes the following:

- A. Manage the Natural Area and Study Area according to principles of multiple use, but maintain the prey base and nesting habitat for raptors as a primary emphasis of management. Permit other uses only when compatible with maintaining continued high

raptor densities and productivities. This may require continued control of activities which, either directly or indirectly, may diminish raptor nesting and/or feeding opportunities. Such actions presently include restrictions on shooting during critical times of the year, use of the surrounding air space, and off-road vehicle (ORV) use. Enforce these restrictions by patrolling the area during periods of high public use.

- B. Give management priority to species listed as threatened or endangered by the U.S. Department of Interior, and to those species designated as "sensitive" or having a "high public interest" by the Idaho Department of Fish and Game. Included here are the golden eagle, prairie falcon, peregrine falcon, bald eagle, osprey, white sturgeon, merlin, ferruginous hawk, bobcat, river otter, and spotted bat.
- C. Manage the habitat for species forming the raptors' prey base. Depending on the raptor species, this includes rodents, rabbits, birds, reptiles, and fish.
- D. Monitor raptor and prey populations to determine what impacts management and multiple-use activities are having on the ecosystem. Use these monitoring data to justify changing management actions to meet these objectives.

- E. Manage the habitat for other forms of wildlife, such as waterfowl, upland birds, deer, furbearers, and fish, in a manner consistent with the objectives of the proposed Conservation Area.
- F. Preserve unique natural systems and processes as directed by the Federal Land Policy and Management Act.
- G. Control all kinds of development within the area. Because beneficial raptor management practices are of priority within the area, any development must be carefully planned, fully justified, and consistent with other land uses in the area.
- H. Monitor and regulate public access, use, and recreational activities to protect raptors and their nesting activities.

These management recommendations would continue to be implemented should the proposed Conservation Area be established, at least until the existing plan is updated and/or revised.

INTERRELATIONSHIP WITH THE BUREAU PLANNING SYSTEM

The concept of a Snake River Birds of Prey National Conservation Area was developed through the BLM's land-use planning process. This process was guided by the basic resource inventory data contained in the Saylor Creek, Kuna, and West Owyhee Unit Resource Analyses (URA) and by

management decisions developed in the corresponding land-use plans called Management Framework Plans (MFP).

In 1970 the Bureau's Boise District began its planning effort for the Kuna Planning Unit, which contains the majority of the crucial habitat for the raptor prey species. It was the Kuna MFP that first detailed the need to establish a "buffer zone" for raptors along the Snake River Canyon. Research was recommended to determine the land base necessary to support the prey species required to maintain the present population of raptors that nest and raise their young in and along the canyon. The Saylor Creek MFP was completed in 1972. A management decision regarding raptors recommended the following: "...locate, record, and protect nesting habitat of golden eagles, prairie falcons, and other raptors."

In 1972 and 1973 the Boise District initiated the West Owyhee planning effort and completed it in July 1975. This plan essentially recommended that no actions be allowed within the Birds of Prey Study Area (hereafter "Study Area") that would significantly affect the raptors or their habitats until ongoing research was completed.

In May 1976 a more detailed Habitat Management Plan (HMP) was developed specifically for the Natural Area and Study Area. This HMP included discussions of management objectives and recommendations relating not only to raptors and their habitats, but also to other wildlife, public use, archaeological values, general access and development,

research needs, and land acquisition priorities. In August 1976 this HMP was formally acknowledged as the comprehensive management plan for the area pursuant to Title II of the Sikes Act (P.L. 93-452). This was accomplished through a Memorandum of Agreement between the Director of the Idaho Department of Fish and Game and the Idaho State Director of the BLM.

It was this progression from the three URA's and MFP's, the detailed HMP, and the Sikes Act agreement that generated the "Management Plan for the Proposed Birds of Prey National Conservation Area" discussed in the preceding section of this chapter, Administration and Management. Thus, the development of the proposed action considered in this environmental statement has been thoroughly planned and researched.

INTERRELATIONSHIP WITH STATE, LOCAL, AND OTHER FEDERAL AGENCIES, PRIVATE GROUPS, AND UNIVERSITIES

Bureau of Reclamation (BuRec) - The only other Federal agency with public land jurisdiction in the proposed Conservation Area is BuRec. BuRec withdrawals cover nearly 164,000 acres, of which over 21,500 acres are in the existing Natural Area (see Map 1-2). Unless otherwise directed by the Secretary, BuRec plans on retaining the withdrawals along the Snake River Canyon because of the potential for hydroelectric development. The lands on the Snake River Plain adjacent to the canyon were set aside for their agricultural potential in the event BuRec developed irrigation facilities to serve the area.

U.S. Air Force - Approximately 3,680 acres of public land are withdrawn under Public Land No. 987 for the Mountain Home Air Force Base.

Fish and Wildlife Service (FWS) - Two endangered species, bald eagles and peregrine falcons, occur within the proposed Conservation Area. Section 7 of the Endangered Species Act requires a formal consultation with the FWS whenever any action may affect an endangered species or its habitat, even though the action may be beneficial to the species. The required consultation was completed on January 23, 1979. The FWS biological opinion indicated that the proposed Conservation Area will likely promote the conservation of the two endangered species.

Idaho National Guard - Since 1953, the Idaho National Guard has been conducting military exercises in a portion of the proposed Conservation Area. During 1978, 40 training exercises were conducted involving a strength of over 6,300 personnel. The military maneuver permit issued to the Guard by BLM covers 122,600 acres, about 15,000 acres less than the original permit (Map 1-2). The reduction was made to protect an important white sage area (a unique plant community), to keep military maneuvers away from a powerline, and to keep the maneuvers from directly interfering with the raptors in the canyon.

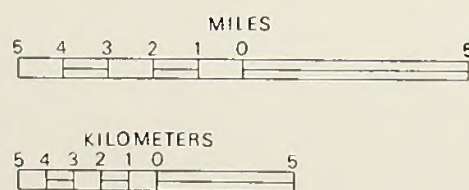
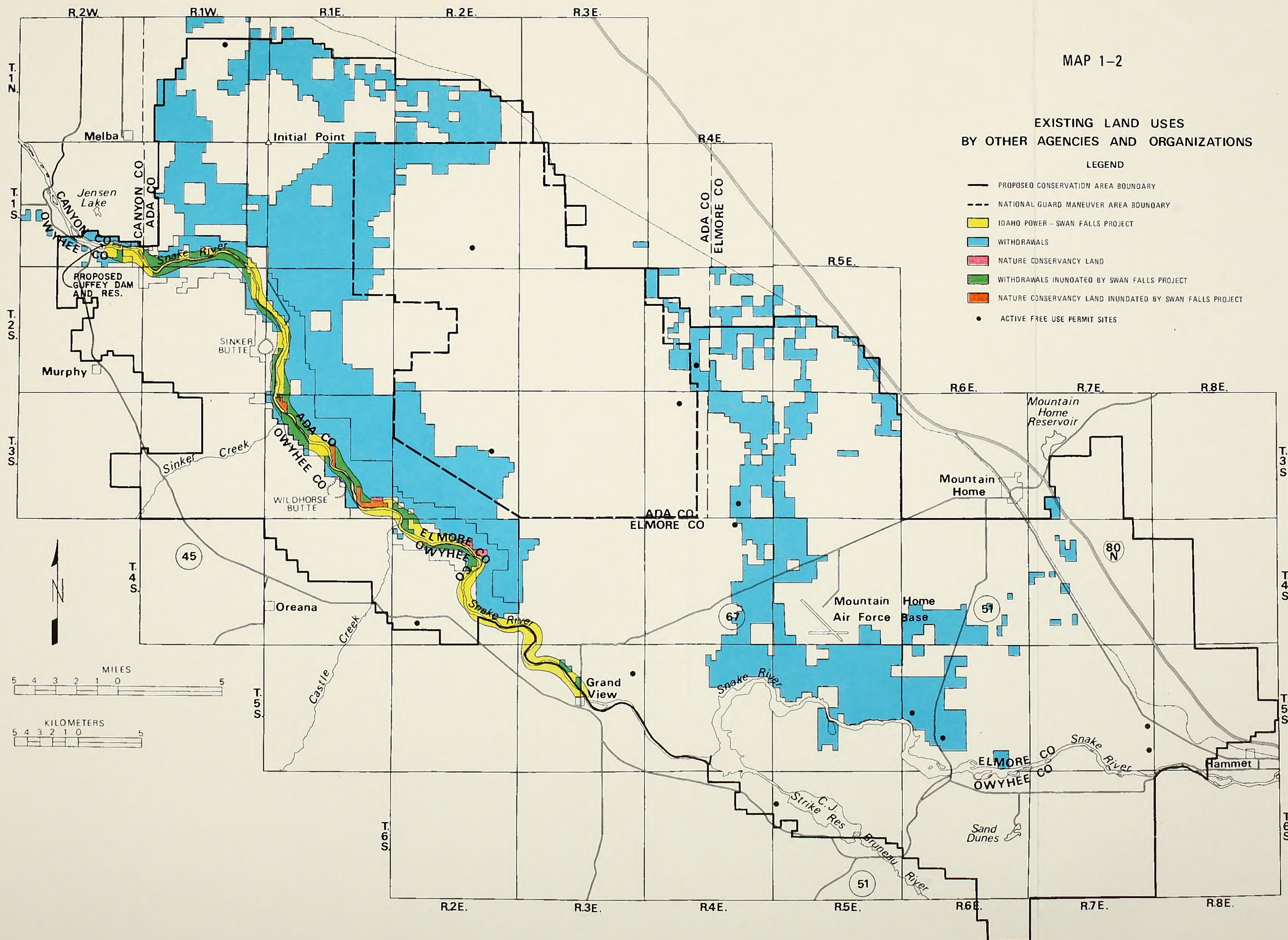
Idaho Department of Fish and Game (IDFG) - A Memorandum of Agreement for administration of the Natural Area and Study Area was entered into on August 19, 1976, between the IDFG and the BLM (see above). In this agreement the IDFG is delegated the authority to enforce all BLM regulations and the Idaho Fish and Game Code to ensure the protection and

MAP 1-2

EXISTING LAND USES
BY OTHER AGENCIES AND ORGANIZATIONS

LEGEND

- PROPOSED CONSERVATION AREA BOUNDARY
- - - NATIONAL GUARD MANEUVER AREA BOUNDARY
- IDAHO POWER - SWAN FALLS PROJECT
- WITHDRAWALS
- NATURE CONSERVANCY LAND
- WITHDRAWALS INUNDATED BY SWAN FALLS PROJECT
- NATURE CONSERVANCY LAND INUNDATED BY SWAN FALLS PROJECT
- ACTIVE FREE USE PERMIT SITES



conservation of wildlife in the two areas. In light of the fact that the Snake River Birds of Prey effort involves primarily nongame species, and because the IDFG must emphasize game management in expending their funds, BLM has been encouraged by IDFG to continue working toward protecting the wildlife resource in the Study Area. Cooperation has been close throughout the development of the current proposal.

Idaho Department of Lands - Within the proposed Conservation Area are about 43,600 acres of State-owned lands, of which slightly more than 25,000 are the subject of an exchange proposal with BLM. The exchange would consolidate Federal ownership in the Study Area and block up State ownership along the boundary and outside it.

Ada, Canyon, Elmore, and Owyhee Counties - A cooperative law enforcement agreement is negotiated annually between the Ada, Elmore, and Canyon County Sheriff Departments and the BLM to improve law enforcement in the Natural Area. The BLM contracts for county enforcement of ORV and shooting restrictions and other applicable ordinances within each county portion of the area. The proposed Conservation Area encompasses rural lands within each of the three counties. County comprehensive land-use plans favor such uses as grazing, farming, recreation, and open space. Ada County has specifically endorsed the concept of the Natural Area (Section 15, Ada County Comprehensive Plan).

Idaho Power Company - Idaho Power Company has proposed to build a two-dam complex within the existing Natural Area. The Swan Falls Dam would

raise the existing dam 34 feet putting the normal maximum water surface level at 2,354 feet above sea level. Daily fluctuation would be 2.5 feet. Guffey Dam site is downstream from Swan Falls and a few miles out of the Natural Area, but within the Study Area. Guffey Dam would be 35 feet high with a normal pool maximum height at 2,292 feet above sea level. Daily fluctuation would be 7 feet. Both dams are designed to pass a flood of 106,000 cfs. EDAW Inc., is preparing an impact statement on the project for the Idaho Power Company. Target date for completion of the statement is the spring of 1979. The lands that would be inundated by the Swan Falls-Guffey project are shown on Map 1-2.

The Peregrine Fund, Inc. - The BLM and The Peregrine Fund, Inc., of Cornell University, entered into cooperative agreements in 1977 and 1978 to attempt to reestablish peregrine falcons in the proposed Conservation Area. The Peregrine Fund supplies and/or secures the young falcons, personnel for liaison, observation and biological work, necessary permits, and specialized equipment. The BLM furnishes funds, authorizes the use of public lands necessary for the reintroduction efforts, enforces mutually agreed upon regulations, supplies air transportation for the falcons, and provides a vehicle and radio contact for use in the project.

The Nature Conservancy - The Nature Conservancy is a private organization with a primary mission of identifying and protecting ecologically unique areas. They own many areas which illustrate the natural diversity of environments in America. A secondary activity of The Nature Conservancy is purchasing land needed for parks, refuges, and conservation areas whenever a government agency is unable to do so. Later, the agency can

purchase the property from The Nature Conservancy for its costs, i.e. the original purchase price plus administrative and related costs. Recently, The Nature Conservancy exercised options to purchase five crucial inholdings of private land in the Natural Area totaling nearly 900 acres (See Map 1-2). According to The Nature Conservancy, this area contains 14 known nesting sites of birds of prey. It also contains the few springs that border the river, volcanic cliffs, Indian caves, box canyons, as well as almost five miles of Snake River frontage.

Colleges and Universities - The BLM has entered into cooperative studies many times in the last seven years with Boise State University and the College of Idaho. The schools have provided students to perform biological work in the Study Area while the BLM provided equipment, vehicles and authorized the use of public lands necessary to perform the studies. The University of Montana has been actively involved in a student internship program to assist in biological work in the Study Area.

CHAPTER 2

DESCRIPTION OF THE ENVIRONMENT



CHAPTER 2

INTRODUCTION

The data on which the proposed Conservation Area boundary (Map 1-1) is based were collected and analyzed for the Birds of Prey Study Area. To be consistent with the technical research documents, this description of the environment will address the 833,015-acre Study Area (Map 2-1) which includes the 719,914-acre proposed Conservation Area. Conceptually, however, the following discussions apply equally to both areas.

General Location of the Study Area. The Study Area occupies approximately 1,250 square miles of Ada, Canyon, Elmore, and Owyhee Counties, Idaho (Map 2-1). It consists of 81 miles of parallel canyon walls with the Snake River and its narrow riparian zone between them. Also included are the adjacent uplands--about 5 miles to the south of the canyon and 15 miles to the north. Current administration and management of this area has been discussed in Chapter 1.

The nearest large cities to the Study Area are Boise (pop. 130,000) and Mountain Home (pop. 10,000), Idaho. Mountain Home is just off the northeast corner of the area, while Boise is about 30 miles due north. Major access routes through the area are Highway 45 from Murphy to Bruneau, Highway 67 from Mountain Home to Grandview, and Highway 51 from Mountain Home. Several improved county roads and unimproved trails provide additional but limited access within the Study Area.

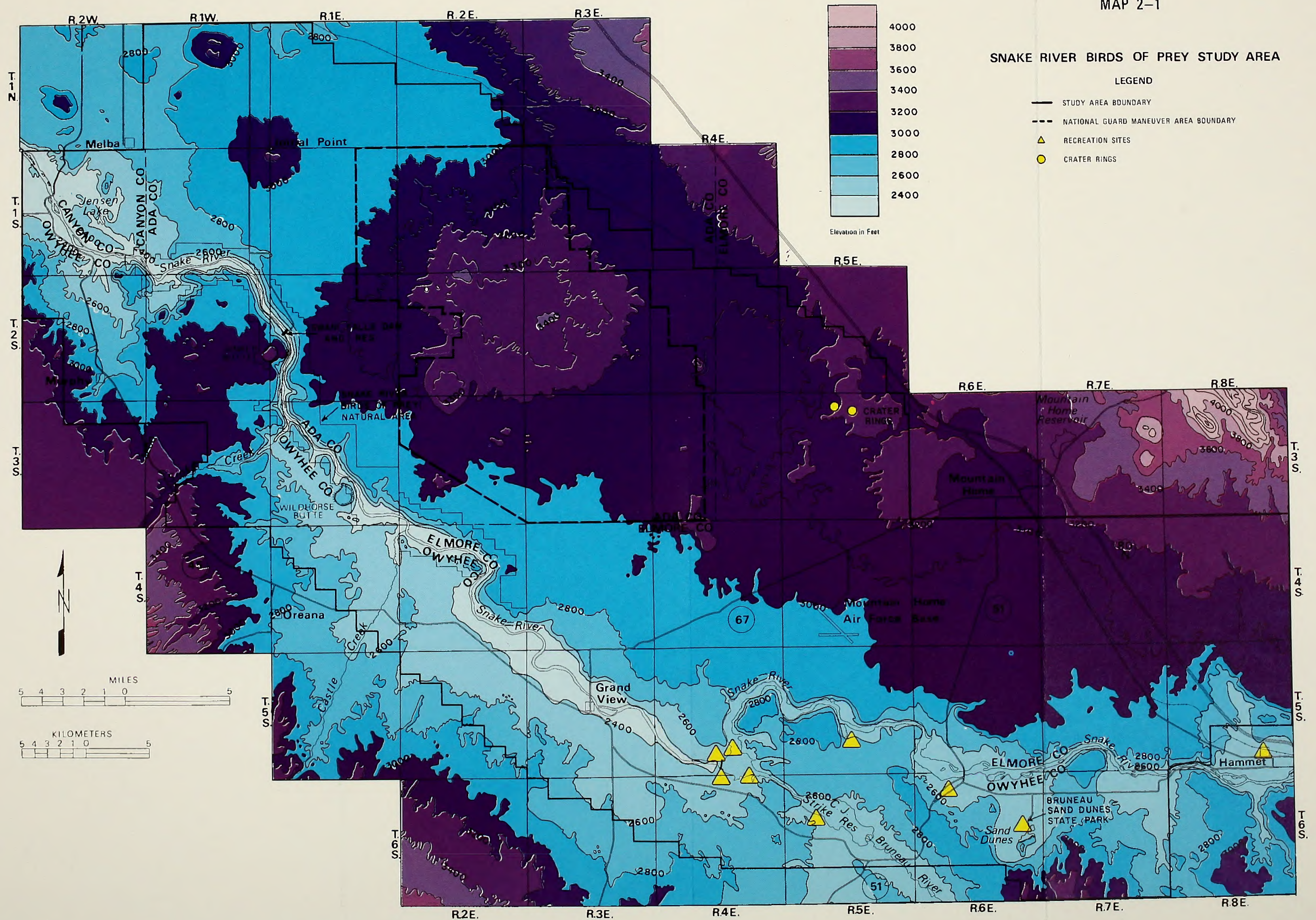
Climate and Weather. The Study Area lies within the Upper Sonoran Desert Life zone which is characterized by hot dry summers and mild winters. Annual precipitation averaging eight inches at Swan Falls, generally occurs in the winter and early spring. The growing season varies from 110-150 days. The climate is strongly influenced by the precipitation shadow of the Oregon Coast Range and the Cascade Mountains. The desert-like conditions result in a bunch grass, sagebrush-grass vegetation.

High winds are common to the area. These winds occasionally cause dust storms as they blow across unplanted fields. This temporarily decreases overall air quality which usually is excellent and free of particulate matter.

Topography. The principal physiographic feature of the study area is the Snake River Canyon. The canyon and side draws are comprised of basalt overlying softer sedimentary deposits. Cliffs and canyon walls range in height from 25 to 600 feet with the river cutting as much as 800 feet below the surrounding terrain. The elevation of the canyon near Swan Falls ranges from 2,300 feet above sea level near the floor to 2,800 feet above sea level at the rim.

Topography of the study area above the canyon is generally flat or slightly rolling. A few prominent volcanic features (isolated cinder cones and basaltic buttes) dot the otherwise flat landscape north of the river, while the lands south of the river exhibit a muted, "badlands"-

MAP 2-1



like topography. The geologic origins of the Snake River Canyon are discussed later in this Chapter under "Wildlife" as part of the scenario which describes the Study Area as a complete habitat for birds of prey.

Water Resources and Fisheries. The Snake River bisects the Study Area and is the main body of water in the area. Several permanent streams flow from the basalt walls and canyons into the main Snake River Canyon. Water from these streams originates from perennial surface streams, underground springs, and return flow from agricultural irrigation.

The Snake River, a major tributary of the Columbia River, is itself one of the largest rivers in the United States. It extends about 1,000 miles from its origin on the western slopes of the Continental Divide in Yellowstone National Park, Wyoming, to its mouth near Pasco, Washington. The Snake River drains an area of 109,000 square miles, including approximately 87 percent of Idaho (Laird 1964).

Major water uses of the Snake River in Idaho include agriculture, industrial processing, and municipal uses. The Snake River has been considered the "life-line" of Idaho since the bulk of the above activities within the State lie within a 50-mile wide belt along the river and its major tributaries, contributing significantly to many local economies. Other uses of the Snake River water include aquaculture and recreational activities, such as fishing, boating, hunting, and sightseeing.

Unlike the river reach upstream of the Thousand Springs area near Hagerman, the Snake River within the Study Area has a relatively stable flow throughout the year (annual average about 9,800 cfs (USGS 1965)).

This, in large part, is due to the Snake River Plain's aquifer which discharges 6,500 cfs to the Snake River, principally near Thousand Springs. Within the Study Area the river remained free flowing until 1901 when hydropower demands led to river impoundment creating Swan Falls Reservoir and later, C.J. Strike Reservoir in the 1950's.

The Bruneau River, a major tributary of the Snake, enters the Study Area in its southeastern quarter and drains a 2,650 square mile area. As in many of the other tributaries of the Snake River, the Bruneau River also has a history of fluctuating flow. Other tributaries of the Snake River within the Study Area include Castle Creek, Sinker Creek, and several intermittent streams, such as Rabbit, Birch, Little Valley, and Canyon Creeks (Map 2-1).

Water quality in the Snake River in Idaho is presently affected by agricultural activity, industrial processing plants, and untreated domestic waste water. Agricultural irrigation return flows have been found to carry sediment, nutrients, bacteria, and pesticides into the river (IDHW 1976). Municipal and industrial discharges to the Snake have been identified as major contributors of oxygen demanding organic pollutants which can deplete the dissolved oxygen of receiving waters (USDI 1968). These discharges can also cause p^H , temperature, toxicity, and bacteriological problems. Aquaculture has also increased settleable and suspended solids discharged to the river. Although most of the above activities and associated water pollution occur upstream from the Study Area, these pollutants are still carried through the Study Area.

Discharge from the Snake River Plain's Aquifer just above the Study Area helps to dilute water-borne pollutants from further upstream.

At present, Snake River water within the Study Area is high in dissolved solids and nutrients (IDHW 1978). Water temperatures in mid-summer may reach as high as 78° F; winter temperatures may fall as low as 37° F. Water quality within the Study Area is presently suitable for irrigation and primary and secondary recreational contact, but it is not suitable for domestic drinking water without prior treatment.

C.J. Strike and Swan Falls Reservoirs exhibit water chemistry similar to the free flowing section of river in the Study Area. Surface water temperatures reach as high as 75° F in August when oxygen deficits occur at 40 feet and deeper.

Most of the permanent waters of the Study Area are of sufficient quality to support sizable fish populations. White sturgeon inhabit the free flowing sections of the Snake River within the Study Area. This species is on the Idaho list of sensitive species which is recognized by both the Idaho Department of Fish and Game and BLM. The sturgeon prefers swift moving waters and thus does not do well in impounded waters. It is occasionally seen in the Snake River arm of C.J. Strike pool, however. Growth rates of sturgeon in the Study Area are good; this species reaches lengths of at least 10 feet and has been recorded to weigh in excess of 600 pounds. The Study Area is currently closed to all but catch and release fishing for sturgeon. Catch rates have been as high as one fish

for each six angler hours for larger sturgeon and as many as eight or nine fish up to 18 inches long in one angler day.

Of the game fish present from the eastern edge of the Study Area down to C.J. Strike Reservoir, channel catfish and smallmouth bass predominate; brown bullhead, mountain whitefish, bluegill, and black crappie are common. Rainbow trout are occasionally taken. Of the nongame fish in this river reach, northern squawfish and peamouth are abundant; suckers, carp, chiselmouth, and redside shiners are present in smaller numbers.

In a survey of C.J. Strike Reservoir, eleven or more species of game fish and nine or more nongame species were found; game fish comprised about half the total numbers (Reid 1974). Largemouth bass were the dominant game fish followed by bluegill, black crappie, and yellow perch. Since the completion of Reid's survey in 1973, there are indications of shifts in species abundance. Largemouth bass and black crappie appear to be declining in abundance, while channel catfish and smallmouth bass are increasing (Reid and Pollard pers. comm.).

The river reach from C.J. Strike Dam downstream to Swan Falls was surveyed in 1972 by Goodnight and Bowler. Game species constituted only 11 percent of the number of fish caught; mountain whitefish, bluegill, black crappie, and yellow perch predominated. Carp and suckers were very abundant in this river reach and northern squawfish were also present. Angler catch rates of game fish were only about one-third to one-fourth the catch rate in C.J. Strike Reservoir.

In Swan Falls Reservoir the results of two surveys indicated that less than 5 percent of the fish collected were game fish and these were so few as to be insignificant (Sigler et al. 1972; Goodnight and Bowler 1973); most were black crappie and mountain whitefish. Nongame fish species composition was similar to that of upstream river reaches.

WILDLIFE

General Wildlife Considerations. During any given year an estimated 259 wildlife species (45 mammals, 165 birds, 8 amphibians, 16 reptiles, and 25 fishes) inhabit the Birds of Prey Study Area. Lists of species, scientific names, seasons of use, and relative occurrence are given in Appendix A. Details concerning the life histories of most of these species will not be covered here. Refer to the technical report (Kochert et al. 1979) for additional information. What will be covered here is the ecological information that explains why the existing environment is unique and especially attractive to birds of prey.

The Origin of a Rich Wildlife Habitat. Several important factors contribute to the species diversity and abundance of wildlife on the Study Area. Geology, topography, soils, vegetation, climate, and numerous other environmental factors make the Study Area a complete and stable ecosystem where both predators and prey occur in unusually high numbers. The origin of these favorable conditions of shelter and food is fundamental to the uniqueness of the proposed Conservation Area.

About two million years ago, widespread volcanic activity resulted in successive basaltic flows throughout the area now known as the Snake River Plain. Cooling of the lava caused the "blocky" nature of much of the basalt, resulting in widespread fractures in the various layers. As water flowed through the area and cut down into these layers during the hundreds of thousands of years that followed it created the Snake River Canyon. This action coupled with erosion from the wind and rain exposed literally thousands of small fractures and holes in the canyon walls which now provide shelter for any wildlife species that can use them.

Still another important geologic event occurred in the Study Area about 30,000 years ago. The Snake River Canyon was already near its present depth at the time Lake Bonneville, an ancient lake in Utah the size of Lake Michigan, spilled over the crest at Red Rock Pass into the Snake River drainage. This tremendous volume of water widened the canyon areas slightly and deposited huge boulders along the canyon bottoms. Some additional erosion of layers and pockets of sedimentary material along the cliff faces occurred at this time.

These vertical cliffs with their many fractures and holes now provide one principal characteristic of the complete raptor habitat of the Study Area: shelter and security for nest sites. But this shelter and security is also available to nesting raptors in several nearby canyons (e.g., the Snake River Canyon near Twin Falls, Idaho; the Bruneau River Canyon, and the Owyhee River Canyon), but it is not exploited to the same extent as in the Study Area.

There is a sharp increase in the numbers of all species of nesting birds of prey as one enters the west boundary of the Study Area. The nesting density is highest in the Swan Falls stretch of the canyon, and it is high between Bruneau and the east boundary of the Study Area. Continuing east, upstream towards Bliss and Twin Falls, the number of pairs drops off again rather dramatically (Fig. 2-1). Such increases in raptor densities do not occur to the same degree in the other canyons mentioned above. Thus, some other habitat characteristic helps make the Study Area (or the proposed Conservation Area) unique.

At the same time as the Snake River Canyon was being cut and the walls were being molded by the elements, the winds were depositing deep, medium-textured soils on the large flat plain above the canyon. In the existing environment these soils are vital to virtually all life forms (both plants and animal) in and around the Study Area, for they have allowed the development of an extraordinarily rich wildlife habitat. The Study Area contains the largest remaining relatively undisturbed deposit of these soils. They have remained undeveloped because once the Snake River drops down into the canyon, irrigation water cannot simply be diverted and distributed by gravity flow. Until recent years the technology for high capacity, high-lift pumps (which provide access to Snake River water from the canyon) had not been developed.

The key soil characteristic that promotes high raptor densities (at least indirectly) is texture. In these medium-textured soils small mammals can dig their burrows which remain very stable due to the dry climate. Of particular interest is the Townsend ground squirrel whose

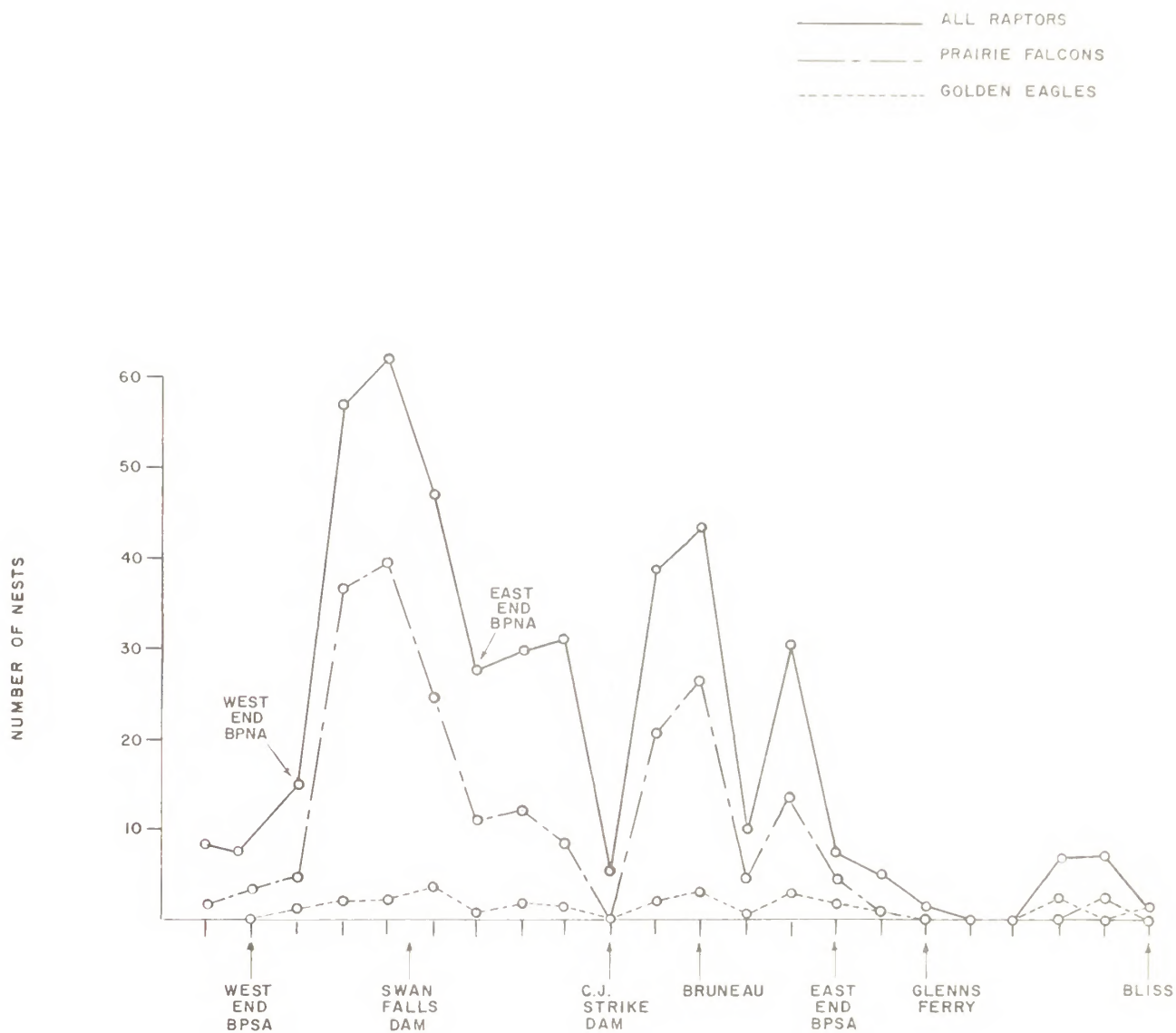


Figure 2-1 Number of occupied birds of prey nests in the Snake River Canyon from Givens Hot Springs to Bliss, Idaho, 1976.

Source: Snake River Birds of Prey Research Project Annual Report, 1976, Bureau of Land Management.

density--just as with the birds of prey--increases as one enters the Study Area from the west and decreases as the eastern boundary is approached.

The prairie falcon/Townsend ground squirrel interrelationship is particularly illustrative. The falcon nests in the fractures and holes of the canyon walls, while the ground squirrel exploits the suitable soils of the plain above the canyon. BLM's research has shown that Townsend ground squirrels are the most important prey species of prairie falcons in both numbers and biomass (Kochert et al, 1976). Ground squirrels comprise as much as 74 percent of the prairie falcons' diet during good ground squirrel years. A few other rodents, birds, reptiles, and invertebrates are also eaten, but BLM's research has proved conclusively that the high density of ground squirrels ensures the high density of nesting prairie falcons (Kochert 1979). This relationship is explored further later in this Chapter.

It is also important that this prey base is located at a higher elevation than the nesting sites. This is "...unusual for most birds of prey, and makes it very easy for the raptors to bring food to their young. Instead of lifting their quarry into high cliffs, the adults drop down from their hunting areas to get to the nests" (Nelson 1979).

Virtually the same predator-prey relationship exists between the badger and the Townsend ground squirrel. The Study Area also contains the densest known population of badgers ever studied (Messick 1978). This large badger population is a result of the ideal burrowing soils and the resulting abundance of Townsend ground squirrels, the principal food source.

The national--indeed, international-significance of the Study Area (and thus the proposed Conservation Area) has been succinctly stated by Morlan Nelson (1979) as follows:

"The combination of these factors makes this area unique throughout the world as a complete habitat for birds of prey. It is not possible to go in any direction from this area without losing several of the important characteristics that make up this unique situation. The soils change, the geology changes, the climate and water supply changes; and in no other area in the Northern Hemisphere or in any other area of the world do these combinations of factors occur to such benefit to the birds of prey."

Raptor Population Densities in North America. Six hundred eleven pairs of birds of prey of 15 species nested within the Study Area in 1978. Table 2-1 shows the number of nests occupied by birds of prey in 1976, 1977, and 1978 both in the existing Natural Area and in the entire Study Area. The extraordinary magnitude of this annual assemblage of nesting raptors is evident only when comparisons are made to other parts of North America.

Data for raptor populations in some of the best habitats on this continent show the Natural Area and its extension contain the highest density of nesting raptors by a factor of 3 to 4 times (Table 2-2).

TABLE 2-1

NUMBER OF NESTS OCCUPIED
BY BIRDS OF PREY
1976-1978

<u>Species</u>	<u>BPNA</u>			<u>BPSA</u>		
	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>
Prairie Falcon	129	126	116	207	209	183
Golden Eagle	11	11	11	34	33	32
Red-tailed Hawk	25	30	26	57	62	59
Kestrel	11	17	17	25	44	44
Ferruginous Hawk	5	6	5	14	19	18
Marsh Hawk	10	9	10	21	23	23
Swainson's Hawk	0	0	0	1	1	1
Great Horned Owl	8	9	5	15	18	20
Barn Owl	4	10	7	13	40	69
Screech Owl	2	3	1	2	6	3
Long-eared Owl	2	2	5	2	3	9
Burrowing Owl	0	0	2	9	10	18
Short-eared Owl	0	0	0	0	0	2
Turkey Vulture	1	1	1	1	1	2
Common Raven	<u>46</u>	<u>56</u>	<u>51</u>	<u>114</u>	<u>120</u>	<u>128</u>
	254	280	257	515	589	611

SOURCE: Snake River Birds of Prey Research Project Annual Report 1978.
U.S. Department of the Interior, Bureau of Land Management.
In preparation.

TABLE 2-2

COMPARISON OF RAPTOR NESTING DENSITIES
IN FOUR AREAS IN NORTH AMERICA

<u>Area</u>	<u>Study Area Size</u>	<u>No. Pairs</u>	<u>No. Species</u>	<u>Density</u>	<u>Source</u>
Central Utah	80 mi ²	39.5	12	0.5/mi ²	Smith & Murphy (1973)
Superior Co., MI	37 mi ²	64.5	9	1.7/mi ²	Craighead & Craighead (1956)
Colville River, AK	183 lin. mi.	140	4	.8/lin. mi.	White & Cade (1971)
Birds of Prey Natural Area, ID*	98 mi ² (81 lin. mi.)	578 (578)	15 (15)	5.9/mi ² (7.1/lin. mi.)	Kochert et al. (1979) Kochert et al. (1979)

*Includes the Grandview to Hammet extension.

On an ecosystem basis, only two extensive areas (greater than 1,000 mi²) have been systematically and thoroughly searched for large raptors. The Study Area has about twice as many nesting large raptors as the short-grass prairie of northeastern Colorado (0.33 vs 0.16 pairs per square mile). Olendorff (1975) searched 1,000 square miles of shortgrass prairie and found 158.5 pairs of prairie falcons, golden eagles, red-tailed hawks, ferruginous hawks, Swainson's hawks, and great horned owls. This is 0.16 pairs per square mile. On the 1,250 square mile Study Area in Idaho the comparable figure (also including barn owls, marsh hawks, and turkey vultures which were not found nesting in the Colorado area) is 0.33 pairs per square mile.

Using the high Colorado raptor populations for the comparison increases the significance of having twice as many pairs in the Birds of Prey Study Area. Howard, Wilson, and Renn (1976) estimated the total raptor population (including both large and small species) in 4,801 square miles of southern Idaho excluding the Natural Area to be 0.10 pairs per square mile. Comparable figures for the Study Area (611 pairs per 1,250 mi²) in 1978 give 0.49 pairs per square mile, i.e., nearly 5 times as many.

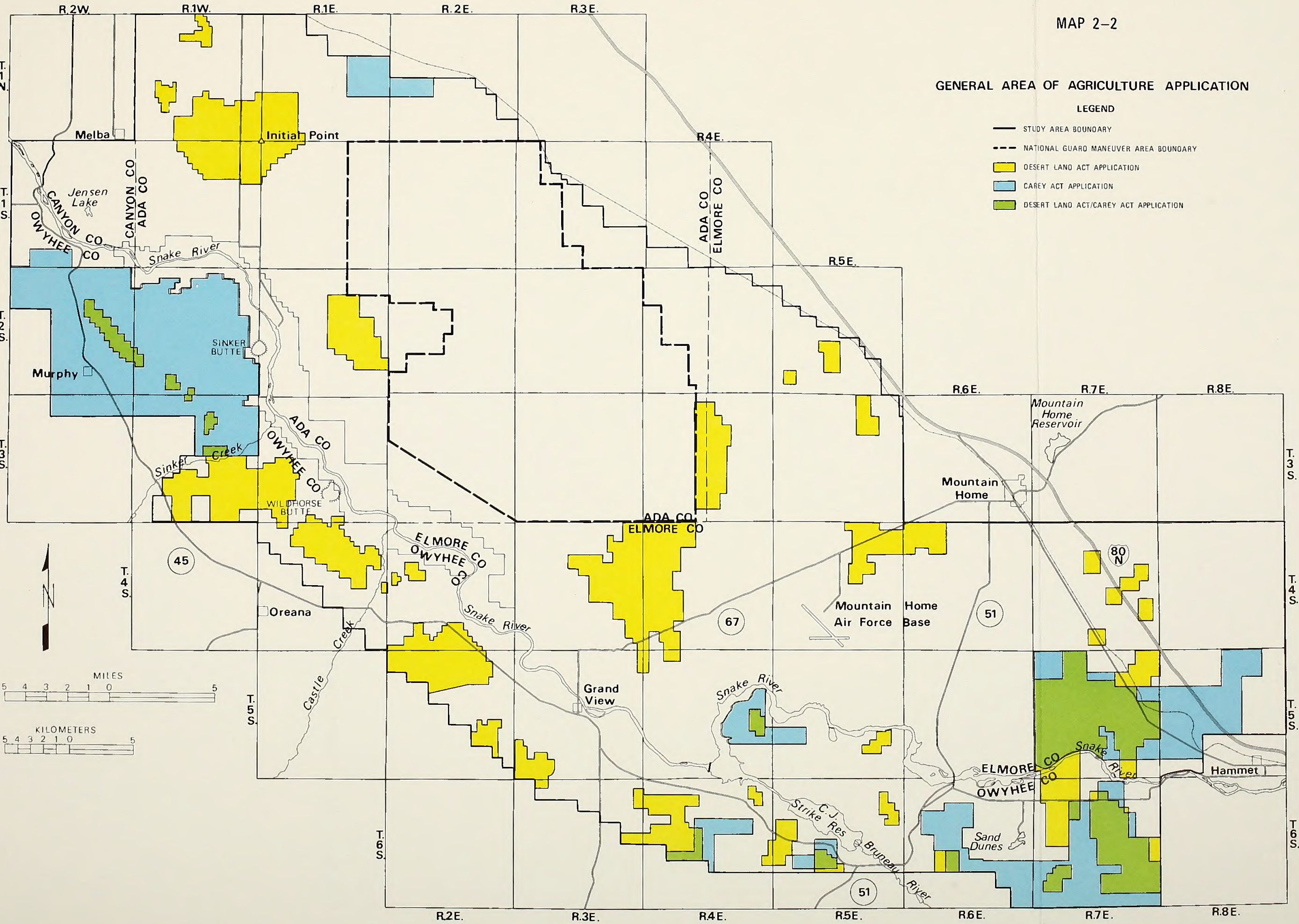
In summary, these comparisons show the Study Area to contain about 5 times as many nesting raptors as the rest of southern Idaho, 3 to 4 times as many as several other areas on the North American Continent, and 2 times as many as the next best known area of comparable size and habitat type.

Prairie Falcon Ecology. Research has shown that "the Birds of Prey Natural Area...may have the highest density of nesting prairie falcons in North America" (Ogden 1973). The prairie falcon is found only in the western half of North America. A recent query of 17 states, 3 Canadian Provinces, and Mexico showed that there are approximately 5,000 to 6,000 nesting pairs in North America. Therefore, the Study Area contains 4 to 5 percent of the world's total nesting population.

The numbers of nesting prairie falcons and the numbers of young they produced had been quite stable for many years prior to 1977. Because of this stability and high reproductive rate, it is felt that the prairie falcon population in the Study Area may be a pool for prairie falcon populations elsewhere. Since the Study Area produces a surplus of individuals it could be the source that repopulates less ideal habitats throughout the west (Wiens, pers. comm.)

In addition to being the most abundant nesting raptor in the Study Area, the prairie falcon also uses the most territory in its hunting forays. It consistently hunts north of the river, over native shrub-grassland ranges. Radio-tracking of adult birds showed that they regularly hunt as far as 15 miles from their nests in the canyon as compared with 3.5 miles for eagles and 3.0 miles for red-tailed hawks (Kochert et al. 1979).

Map 2-2 shows the comparison of hunting ranges for the prairie falcon, golden eagle, red-tailed hawk, and ferruginous hawk. The vast difference in hunting ranges for these four raptors is based on flight



patterns, hunting strategies, abundance and location of prey, and nesting density of the species. The prairie falcons, for example, can cover a large amount of territory because of their flight characteristics. Also, the greatest numbers of ground squirrels (but not necessarily the pockets of greatest density) in much of the Study Area are at least six miles north of the canyon (Map 2-3). Competition for food close to the canyon is intense because virtually all of the raptors nest there. This is resolved in part by the falcons hunting further from the nests and not being vigorously territorial near their nest sites as is the case with golden eagles (see below).

The relationship between prairie falcons and Townsend ground squirrels is so close that 1) the adult falcons arrive in mid-February at about the same time as the adult ground squirrels emerge; 2) the young prairie falcons hatch in May within two weeks of the time that vulnerable young ground squirrels emerge from their burrows; and 3) both young and adult falcons depart in late June or early July as the ground squirrels go underground to hibernate to escape the heat and the dry forage conditions which prevail in late summer. As described earlier, the spatial distribution of the ground squirrels is closely related to the distribution of the dense breeding population of prairie falcons.

The importance of this relationship was demonstrated in 1977 when Idaho and much of the west experienced a major drought. Research showed that among the prey species, the Townsend ground squirrel was affected the most. The lack of fall precipitation in 1976 reduced the germination of cheatgrass, the primary food source for squirrels during the late

winter and early spring. Little green forage was available to squirrels when they emerged from hibernation in mid-February. As a result, most ground squirrels did not reproduce. Only the few squirrels with access to green vegetation, such as irrigated alfalfa fields, reproduced. Non-reproductive ground squirrels entered hibernation in late April and early May, at least a month earlier than in non-drought years (Johnson et al. 1977). Mortality among adult and yearling ground squirrels coupled with virtually no reproduction, resulted in an overall decline of approximately 65 percent in 1978 numbers of adult and yearling ground squirrels compared to the 1976-1977 numbers.

In monitoring the numbers of young produced by all the birds of prey in the Study Area, researchers recorded a large drop in young produced by prairie falcons and ravens during 1977. Fewer adult pairs bred, fewer young were produced and fewer young survived. The heavy dependence of both prairie falcons and ravens on the Townsend ground squirrels for food was reflected in their decreased capacity to produce young during a poor ground squirrel year.

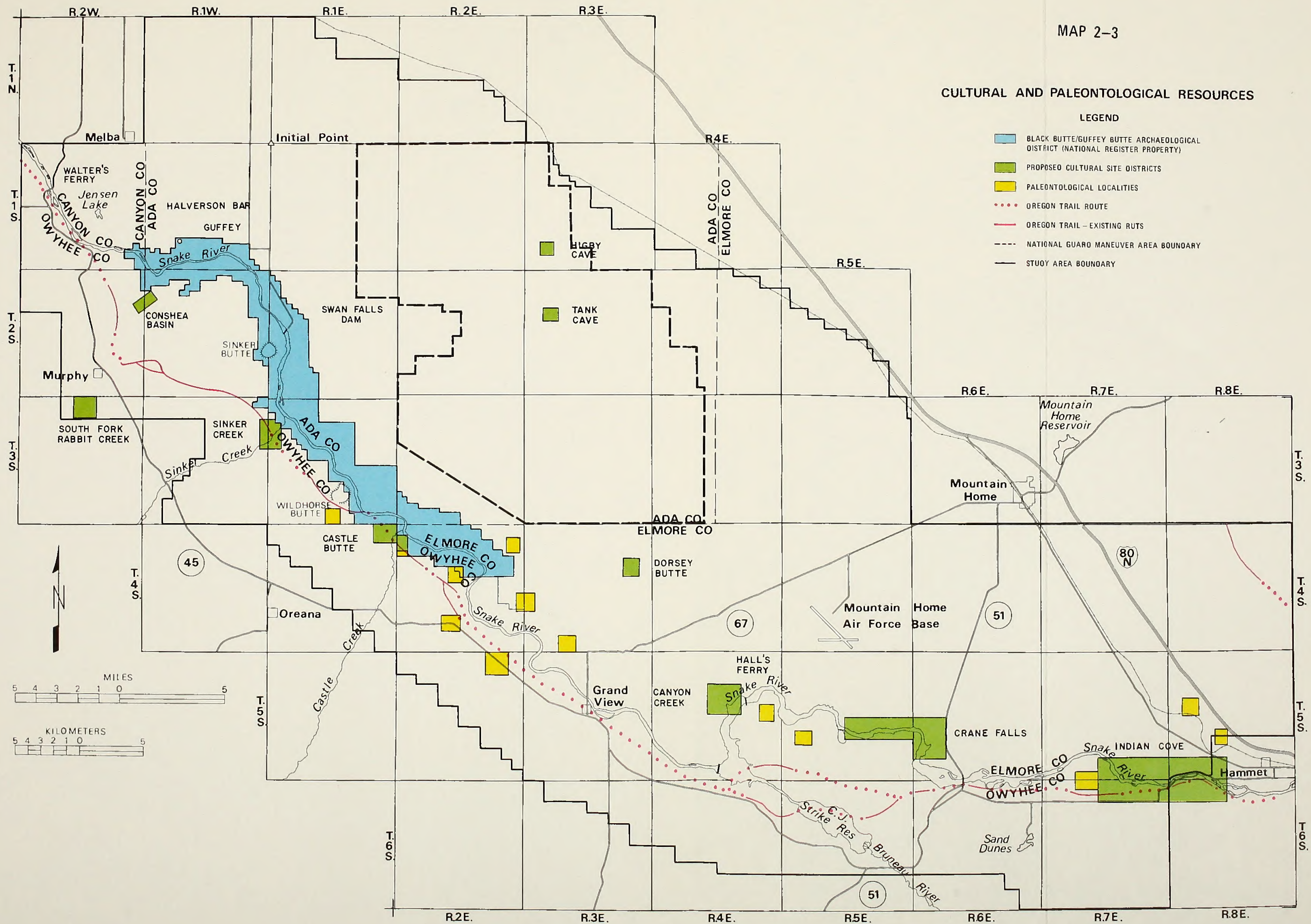
In 1978 the adult ground squirrel population at emergence from hibernation was lower than 1975-1977 levels due to natural mortality and the lack of population replacement in 1977. There was a slight increase in ground squirrel numbers per acre after reproduction in 1978, but the population was much lower than in previous years. Also in 1978, fewer prairie falcons and ravens nested successfully, and fewer young were produced, again corresponding with the lower ground squirrel number.

The full effects of the drought on the prairie falcons and ravens will not be known until after 1980, due to the slow recovery rate of the ground squirrel population.

CULTURAL AND PALEONTOLOGICAL RESOURCES

LEGEND

- BLACK BUTTE/GUFFEY BUTTE ARCHAEOLOGICAL DISTRICT (NATIONAL REGISTER PROPERTY)
- PROPOSED CULTURAL SITE DISTRICTS
- PALEONTOLOGICAL LOCALITIES
- OREGON TRAIL ROUTE
- OREGON TRAIL - EXISTING RUTS
- NATIONAL GUARD MANEUVER AREA BOUNDARY
- STUDY AREA BOUNDARY



Golden Eagle Ecology. The golden eagle population of the Study Area is comparable to, but not significantly larger than, those in many other areas in the western United States. Their density (about $2\frac{1}{2}$ miles between nests) is more regulated by intraspecific territorial behavior and their habit of hunting near their nest sites. Part of the reason for the phenomenal density of prairie falcons on the Study Area is their tendency toward small nesting territories in the canyon and large overlapping hunting areas up to 15 miles from the canyon. The golden eagle is not so flexible behaviorally, and thus their nesting and hunting territories are defended as one in the same unit.

Nonetheless, the golden eagle is an important component of the predator-prey relationships at work in the Study Area. Golden eagles feed on Townsend ground squirrels, but not to the same extent as prairie falcons. The eagles prefer larger prey, such as jackrabbits (60 percent), cottontail rabbits (11 percent), and ring-necked pheasants (12 percent). Golden eagles hunt by watching from perches on large rocks, rims, and power line crossbars. The eagle soars leisurely over its hunting area, covering several square miles of the canyon and its rim where sufficient numbers of jackrabbits, cottontails, and yellow-bellied marmots can be found. Radio-tracked eagles ranged about $3\frac{1}{2}$ miles from their nests, both north and south of the river, over native shrub grassland and some agricultural lands (Dunstan et al. 1978). At nests near agricultural lands the eagles consistently prey on pheasants, more so than at other nests.

Other Raptors. The red-tailed hawk also depends largely on the Townsend ground squirrel for food (about 25 percent of the prey items).

This hawk also eats jackrabbits (27 percent), cottontails (16 percent), reptiles (11 percent), and an assortment of rodents and birds. Red-tailed hawks have a hunting pattern similar to golden eagles: from perches on rocks, canyon rims, trees and shrubs, the ground, and power line crossbars. They also soar like eagles to locate prey, flying for as long as an hour and covering several square miles. Red-tailed hawks nest about one and one-half miles apart, are territorial, and do not compete intensively with each other for food. Most of their preferred food is also found relatively close to the canyon, the same as for eagles. Radio-tracked red-tails hunted north and south of the river, usually ranging about two miles from their nests (Dunstan et al. 1978).

Ferruginous hawks are classified as a sensitive species by the BLM, Idaho Department of Fish and Game, and National Audubon Society. Their food habits are similar to the red-tailed hawk. They nest on low cliffs in the canyon, in the surrounding rolling hills, and on the ground. They hunt from perches and by soaring north and south of the river. Their diet consists mainly of pocket gophers (47 percent), Townsend ground squirrels (43 percent), cottontail rabbits (4 percent), and reptiles (3 percent). The number of ferruginous hawks on the Study Area is not large, but as with other species (marsh hawks and several species of owls) their numbers are contributory to the total raptor population and its diversity.

A large population of ravens is also found within the Study Area; the raven is the second most numerous large bird of prey. Although not taxonomically considered raptors, they are included in the group because they compete with the raptors for both nest sites and food. Ravens compete directly with prairie falcons for nest sites and for Townsend

ground squirrels which make up about 70 percent of the ravens' total diet.

Sensitive, Threatened, or Endangered Wildlife. Two endangered species have been seen in the Study Area. In winter, migrating bald eagles are occasional visitors to the canyon, stopping for a few months before heading north again. The peregrine falcon has been documented in the canyon occasionally since 1948. Between 1972 and 1975 a lone female peregrine lived in the canyon during the nesting season. A wild peregrine was seen migrating through the Study Area in the Spring of 1978.

In 1977 the Peregrine Fund, Inc., of Cornell University, placed three captive-bred young peregrines in a prairie falcon nest within the canyon in an attempt to help reestablish the species in the wild. The young birds were readily adopted and successfully raised by their foster parents. Since the cross-fostering program was successful, five additional captive-bred young peregrines were placed in the canyon in 1978. One was killed by a great horned owl, two were removed because of possible additional owl predation, and two fledged.

Nine terrestrial and one aquatic species are listed as sensitive species by the BLM and Idaho Department of Fish and Game. These species are: spotted bat, river otter, bobcat, ferruginous hawk, osprey, merlin, long-billed curlew, burrowing owl, western ground snake, and white sturgeon.

The following pages contain drawings and brief descriptions of some of the nesting raptors found within the proposed Conservation Area.

AMERICAN ROUGH-LEGGED HAWK

Buteo lagopus

This hawk is characterized by a light head, dark brown belly and black wrist patch on the wings. Legs are feathered to the toes. All birds generally have white on the base of the tail. One very characteristic feature of this species is its habit of hovering in mid-air.

The American rough-leg nests in the Arctic and winters in southern Idaho and elsewhere. The rough-leg is the most common wintering raptor in the Birds of Prey Natural Area and surrounding region. They leave this area usually in April to migrate to the nesting areas in Canada and Alaska. Nests are built of sticks lined with moss or down in trees or on rocky ledges. The American rough-leg is circumpolar in its distribution.

The rough-leg is present in desert areas of the west in the winter when the ferruginous, Swainson's and red-tailed hawks have migrated. It is thought that they fill that niche of preying on small mammals, rabbits and an occasional bird. In October large numbers of rough-legs arrive from their breeding grounds.



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AMERICAN ROUGH-LEGGED HAWK
Buteo lagopus

GOLDEN EAGLE

Aquila chrysaetos

Golden eagles are the largest raptor in the Birds of Prey Natural Area, and may weigh up to 14 pounds and have a wing span of over 7 feet. Females, as with most birds of prey, are larger than males. They require 4 years or more to obtain their full dark plumage with a dark tail. Immature birds in their first year are darker than adults and are recognized by the white underwings and white tail band. Golden eagle legs are feathered to the toe. These birds obtain their name from the tawny or golden buff colored feathers on the crown of the head and nape of the neck.

Eight races of this species have been described world wide throughout the northern hemisphere. While they have drastically declined in the eastern United States, golden eagles are doing well in the West and Canada. There are probably 50,000-100,000 golden eagles in North America.

The most common nesting site is a ledge on a high rock cliff. The nest is built of stout sticks and lined with grass and may be up to eight feet in diameter. Golden eagles may nest in the same nest each year or use alternate nests. A pair may possess as many as 14 alternate nests. One to three chalky white eggs marked with brown splotches are laid in March and April and are incubated 40-45 days. Nestlings fledge the nest at about 10 weeks.

The chief food of this eagle in the Birds of Prey Area consists of rabbits. Biologists have shown a strong correlation between jackrabbit numbers and golden eagle reproduction. Golden eagles in the Birds of Prey Area are year round residents.



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GOLDEN EAGLE
Aquila chrysaetos

AMERICAN KESTREL or SPARROW HAWK

Falco sparverius

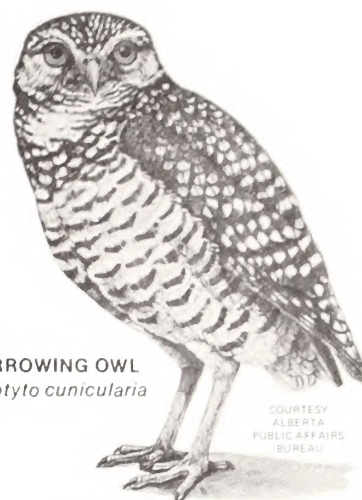
This tiny falcon is 8 to 12 inches long with a 21 inch wingspan and brightly adorned with red, blue and cinnamon colors. Both sexes have red and blue crowns. The male has blue wings and a cinnamon or rusty back and tail and a white breast with black spots. The female has a cinnamon body with dark vertical streaks and vertical brown streaks on the breast.

This is strictly a New World species. It is quite common in Canada and the northern United States. In the Birds of Prey Natural Area they commonly nest in small cavities and crevices on cliffs.

The diet of this species is largely insects such as grasshoppers and dragonflies, and small mice. They are frequently seen perched on telephone poles, fence posts, or hovering in search of prey.



AMERICAN KESTREL
or
SPARROW HAWK
Falco sparverius



BURROWING OWL
Speotyto cunicularia

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BURROWING OWL

Speotyto cunicularia

This small 10 inch long owl is active in the daytime and is found in the prairies, deserts and farms from Canada to South America. It is characterized by long legs and a sandy color. It frequently bobs up and down by quick bending motions of the legs. It is frequently seen perched on the ground, fence posts, or on telephone poles.

As the name suggests burrowing owls nest in abandoned burrows of rodents or badgers often close to civilization. Their food consists largely of insects and small rodents detrimental to man, and their presence should be welcomed. Care should be taken in poisoning programs aimed at rodents in order that these valuable owls are not destroyed.

BALD EAGLE

Haliaeetus leucocephalus

The National Emblem as an adult is easily identified by its white head and tail, but as an immature can be mistaken for a golden eagle because of its completely dark buff mottled appearance. However, bald eagles have bare lower legs and weigh less than golden (between 7-12 pounds). Their wing span is larger and may be up to eight feet.

Bald eagles are only found in North America and are seen in the mountain or northern areas of the country except during migration where they are found near rivers and lakes. They are found in fair numbers in southern Idaho during the winter.

Nests are usually built near the tops of tall trees and may reach a diameter of eight feet. Two to three eggs are layed in each clutch.

This species is both a scavenger and predator eating mainly fish. However, in the winter, rabbits, small rodents and birds make up much of its diet. In the eastern United States and Canada the bald eagle has decreased in numbers in the last few years primarily as a result of DDT and other pesticides.



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BALD EAGLE
Haliaeetus leucocephalus



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GREAT HORNED OWL
Bubo virginianus

GREAT HORNED OWL

Bubo virginianus

This owl is the largest resident owl in Idaho. It has a length of 18 to 25 inches and a wingspan of 52 to 60 inches. The color is sooty brown mottled with grayish-white above and whitish with dark bars below. On the face is a black circle and a clearly defined white throat collar. The toes are fully feathered.

In the vicinity of the Birds of Prey Natural Area it is predominantly a cliff nester on ledges, in holes or in old hawk or raven nests. Their diet is primarily Kangaroo rats and jackrabbits.

They have few natural enemies, but are declining in numbers because of the encroachment of civilization. Their hooting call is the most familiar owl voice heard.

RED-TAILED HAWK
Buteo jamaicensis



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RED-TAILED HAWK

Buteo jamaicensis

The red-tailed hawk is the most common buteo in North America. It is about 18 inches long with a 48 inch wingspread. The tail on adults is red above and light pink below. The upper parts are dark grey-brown streaked and barred with lighter colors. The underside is light cream streaked with brown. Immatures, who do not obtain their adult plumage until their second year, basically look like adults except the upperside of their tail is finely streaked.

Red-tails are found from Panama to northern Canada. In southwestern Idaho this hawk is primarily a cliff nester. They lay from 2 to 4 white eggs slightly marked with brown speckles and incubate them for 30 days. Young fledge at approximately six weeks. This hawk's primary food in the Birds of Prey Area consists of Townsend's ground squirrels, small rabbits and snakes. Occasionally small birds are taken.

Red-tailed hawks can be seen year round in Idaho though many migrate in the winter to a warmer climate. This species often displays a marked animosity towards Great Horned Owls in its territory and vice versa.

MARSH HAWK or HARRIER

Circus cyaneus

This thin hawk is about 17 to 24 inches long; wingspan 42 to 54 inches. The white at the base of the tail is a distinctive feature. When flying the marsh hawk holds its wings above horizontal in a V and generally has a low broken hunting pattern over marshes and fields. Females are brown while adult males are slightly smaller and pale grey.

Immature birds resemble the females. Both sexes have a conspicuous white patch at the base of the tail.

The marsh hawk is found throughout North America and in northern Eurasia. They migrate as far south as South America. They are common in Idaho all year. Nests usually consist of grasses on the ground or on low vegetation. In the Birds of Prey Natural Area these birds nest in the canyon bottom in the riparian areas.

The bulk of the diet is small mammals, mostly rodents. Occasionally they take upland game birds, waterfowl or domestic birds. Nevertheless they are valuable to man in aiding rodent control.

**MARSH HAWK
or
HARRIER**
Circus cyaneus



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WILDLIFE SERVICE

Robert Lloyd Smith



PEREGRINE FALCON
Falco peregrinus

PEREGRINE FALCON

Falco peregrinus

The peregrine is a large bird 15 to 20 inches in length with a 25 to 40 inch wingspread. It is characterized by a heavy black mustache patch and dark head. Adults are blue-grey above. The throat and upper breast are creamy white changing to pink buff with black markings on the lower breast and abdomen.

Peregrine falcons are found world wide. They are now almost extinct in the eastern United States and Canada.

Three or four reddish-brown eggs on the average are laid in a depression on cliff ledges usually near a body of water.

The peregrine falcon may be the fastest and most skillful flier of all birds obtaining a speed of 200 m.p.h. in a dive. Its prey, birds up to the size of ducks, are killed on the wing. For centuries this bird has been prized by falconers.

The population of this falcon is listed as endangered by the U. S. Fish and Wildlife Service. The effects of hard pesticides, notably the metabolites of DDT appear to be the major factor responsible for the decline of the peregrine as well as several other birds of prey.

FERRUGINOUS HAWK

Buteo regalis

The ferruginous hawk is the largest of the American buteos (broadwinged hawks genus *Buteo*) with a length of 20 inches and a wingspread of 54 inches. This species is associated with the badlands of western North America. The ferruginous hawk is generally light colored with a dark rusty brown back. There is, as with most buteos, a melanistic (dark) form. The light phase is characterized in flight by light underparts and a V formed by the reddish-brown legs held against the body and tail. The legs of this species are feathered to the toes.

Two to five eggs are laid in mid-April. Ferruginous hawks in the Birds of Prey Natural Area and vicinity build a regularly shaped stick nest largely out of big sagebrush. Nests are often placed on a low or accessible cliff. Their primary diet consists of jackrabbits, cottontails and rodents.



FERRUGINOUS HAWK
Buteo regalis



PRAIRIE FALCON
Falco mexicanus

PRAIRIE FALCON

Falco mexicanus

The prairie is a light brown falcon of the plains and deserts 14 to 20 inches long with a wingspread of 30 to 40 inches. The plumage is sandy to brown above with white or cream streaked with brown underneath. Newly fledged young are darker above and roseate or creamy below. Their legs, feet and cere are bluish while the adults are yellow. From below prairie falcons are distinguished by the dark brown or black axillary feathers at the base of the wings. The mustache is narrow and runs vertically below the eye.

Prairie falcons occur in western North America from central Canada to northern Mexico. They have experienced local declines associated with pesticides and agricultural development. Ledges or cavities with depressions on a cliff provide eyries where three to six cream or pea green eggs are laid in scrapes of sand or gravel. They are incubated for approximately 30 days. Young fledge at 5-6 weeks.

In the Birds of Prey Natural Area and vicinity the primary prey species is the Townsend's ground squirrel. Falcons may also eat young rabbits, other rodents or small birds such as the horned lark. This species is characterized by a low swift strong flight.

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OSPREY
Pandion haliaetus

OSPREY

Pandion haliaetus

The osprey or fish hawk is 21 to 24 inches in length with a 54 to 72 inch wingspan. The osprey has a white slightly crested head and black cheek patches. When flying it has a distinctive crook in its wings and black carpal patches on whitish undersides.

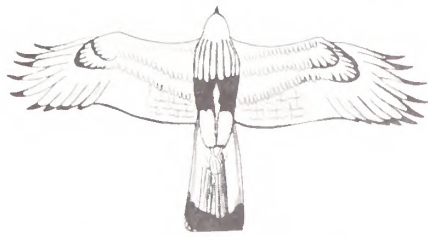
Ospreys are usually seen in the spring migrating through the Birds of Prey Natural Area to timbered areas where they nest, usually in snag trees near water. The nest is a bulky mass of sticks and debris. Their diet is almost 100 percent fish which they prefer to catch alive. This is a cosmopolitan species found in North America, South America, Asia, Africa, Europe and Australia.

There has been a marked decline of ospreys in coastal areas of the United States generally associated with the use of pesticides such as DDT.

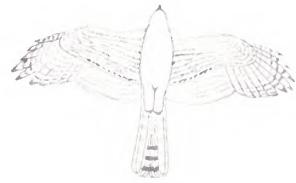
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Raptors

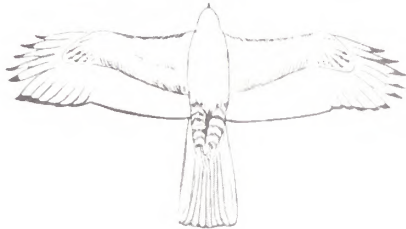
Nesting in the Study Area



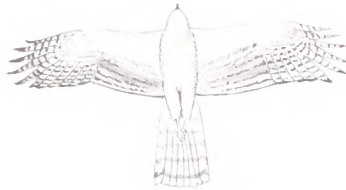
AMERICAN ROUGH-LEGGED HAWK



GOSHAWK



FERRUGINOUS HAWK



SWAINSON'S HAWK



COOPER'S HAWK



RED-TAILED HAWK



MARSH HAWK



SHARP-SHINNED HAWK



PEREGRINE FALCON



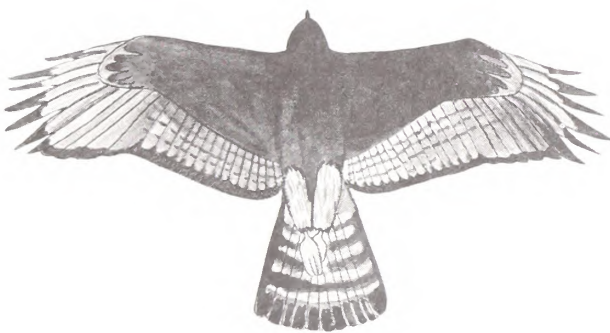
PRAIRIE FALCON



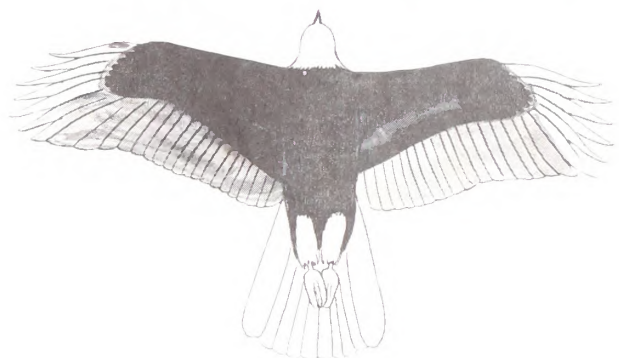
MERLIN



AMERICAN KESTREL



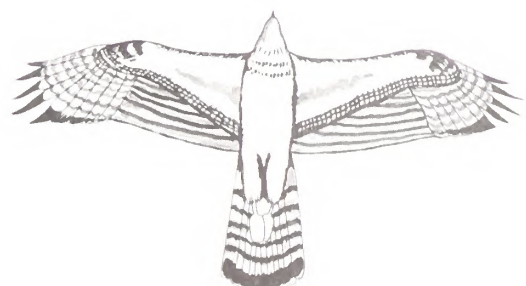
GOLDEN EAGLE



BALD EAGLE



TURKEY VULTURE



OSPREY

Owls

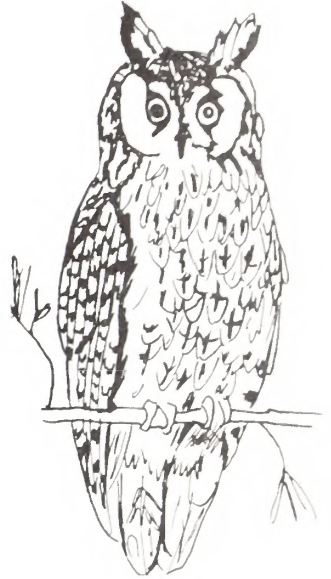
Nesting in the Study Area



GREAT HORNED OWL



BARN OWL



LONG EARED OWL



SCREECH OWL



SHORT EARED OWL



BURROWING OWL

VEGETATION

Vegetation within the Study Area is characteristic of the Snake River Plain desert habitat type of big sagebrush/Sandberg bluegrass. Much of the vegetation is composed of mixed associations of big sagebrush, white sage (winterfat), shadscale, and bud sage occurring in distinct mosaic patterns (Map 2-4). The vegetative cover types and percent of type found in the Study Area are shown in Table 2-3. Agricultural land is scattered through the proposed area with cheatgrass occupying areas disturbed through farming, burning, and military activities.

The stands of white sage are larger than normal. In fact, the white sage area is a significant anomaly being the largest collection of stands in the United States. White sage is unique in its importance to the raptor prey base and to livestock grazing. The highest concentrations of ground squirrels found in the Study Area are usually located in white sage and white sage/big sagebrush communities. These communities are usually found in the most favorable soils and contain the densest plant populations and, therefore, abundant food and cover for small rodents. White sage is an important livestock forage species due to its protein content, palatability, and tolerance to heavy winter grazing. The better white sage areas were excluded from the areas set aside for military maneuvers in order to protect these stands from damage by military vehicles.

Greasewood occupies much of the area within the Snake River Canyon itself as well as south of the river in the eastern portion of the

MAP 2-4

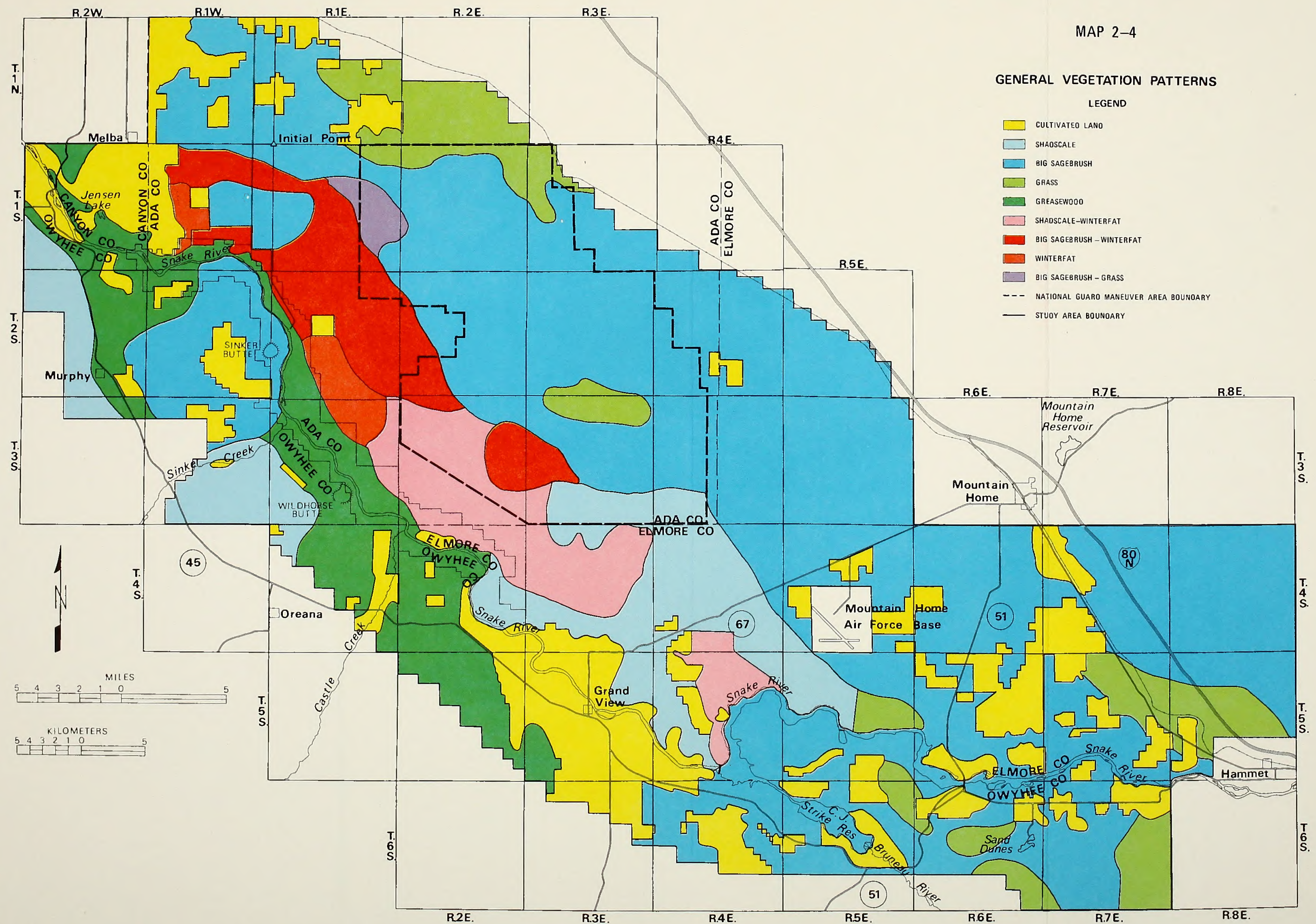


TABLE 2-3

PERCENT OF VEGETATIVE COVER TYPES
IN THE BIRDS OF PREY STUDY AREA

<u>Cover Type</u>	<u>Percent of Area</u>
Sage/bluegrass	11.6
Sage/cheatgrass	11.0
Dense sage	10.5
Winterfat	1.7
Winterfat/sage	2.2
Sage/winterfat	1.4
Sparse shadscale	3.5
Dense shadscale	5.3
Dense grass	1.0
Crested wheatgrass	3.0
Forbs/grass	12.0
Shadscale/winterfat	6.3
New Agriculture	12.5
Old Agriculture	6.6
Sage/shrubs	2.9
Greasewood	3.4
Canyon	2.0
Greasewood/shrubs	0.1
Silt hills	0.4
River	1.4
Untyped	<u>1.2</u>
TOTAL	100.00

proposed Conservation Area. A riparian zone of varying size exists along the Snake River and along the banks of C.J. Strike Reservoir. The riparian zone and the greasewood vegetation type south of the river had large numbers of rodents, but because of their lack of Townsend ground squirrels and low prey vulnerability, they were not the most important contributors of prey. It was ". . .the extensive Townsend ground squirrel population north of the river which caused raptors to preferentially hunt the big sagebrush-winterfat-cheatgrass complex on the north side" (Dunstan et al. 1976). (See the blue areas on Map 2-3.)

The big sagebrush type north of the river ranked overall as the most important contributor of prey for raptors. Not only did it have a relatively large number of rodent species (five), including the Townsend ground squirrel, but also supported a high number of jackrabbits. Shadscale seemed to be relatively poor in its ability to support Townsend ground squirrels. Winterfat and cheatgrass appeared to be good habitats for Townsend ground squirrels, but poor for other rodents. Range ecotones (transition zones between vegetation types) did not show any significant concentrations of rodents. Although range-agriculture ecotones supported concentrations of kangaroo rats, these transition zones did not concentrate other rodent species.

Based on information compiled by the University of Idaho Forest, Wildlife and Range Experiment Station, the following threatened or endangered plants were identified as occurring in or near the proposed area.

Draba douglasii Douglas - Douglas' draba

Lepidium davissii Rollins - Davis' pepperweed

Astragalus mulfordiae M.E. Jones - Muffords' milkvetch

Astragalus purshii Douglas

var. ophiogenes Barneby - woollypod milkvetch

Eriogonum shockleyi S. Wats.

var. packardae Reveal unpub. - matted cowpie Eriogonum

CULTURAL RESOURCES

Prehistoric. Prehistoric sites in the Study Area are present in many forms and may represent an occupation spanning 15,000 years. Sites in the canyon proper are notable in several respects: their number, size, depth of undisturbed deposits, variety, and unique ecological setting. Surveys indicate the present Natural Area contains one of the areas most densely occupied in southwestern Idaho during prehistoric times. Over 200 sites have been recorded in this thirty-five-mile stretch of the Snake River Canyon.

Several overlapping types of sites are recognized in the Study Area with varied activities suggested by the kinds of artifacts found in the sites. Most of the sites are open and consist of lithic (stone) tools and the waste flakes created in their manufacture. Mussel shell is also frequently present in great quantities. Some of the sites have yielded pottery, grinding stones, and a few perishable items, such as basketry.

The following types of sites have been described in the Study Area: quarry and workshop sites, rock shelters, boulder shelters, lava tube caves, and sites reflecting specific subsistence activities, such as fishing stations.

The Black Butte/Guffey Butte Archaeological District was formally placed on the National Register of Historic Places in February, 1979. The District boundaries correspond to those of the existing Natural Area and include 110 prehistoric sites. Several other sites in the Study Area have been identified as eligible for listing in the Register; however, no formal determination of their eligibility has been sought to date. It is expected that many of these sites will receive formal determination and subsequent listing in the Register in the near future (State Historic Preservation Officer pers. comm.).

The significant aspects of the prehistoric sites located in the Study Area are 1) the potential for contributing to knowledge of the prehistoric way of life of early big game hunters and hunting and gathering groups on the Snake River Plain, particularly regarding settlement patterns and resource exploitation; and 2) the potential for dating rock art through measurements of surface oxidation and for associating certain forms of rock art with hunting.

Serious impacts are occurring to a number of prehistoric sites in the Study Area at the present time. Many sites have been subjected to intensive surface collecting and excavation by amateurs over at least the last forty years. Easily accessible rock shelters and highly visible

village sites are the most vulnerable to this type of activity. In addition, rock art in the Study Area has been defaced and removed altogether (Tobias 1976).

Farming and its related support activities have also taken their toll, especially on open sites. Some areas have been cultivated right down to the water's edge, and the installation of irrigation pumps and tanks has all but destroyed some sites. Many sites exhibit severe erosion damage caused by heavy vehicular traffic (Keeler and Koko 1971). Some sites have been damaged by military maneuvers and unauthorized digging by the public in the National Guard Impact Area. These include Tank, Higby, and Cathedral Caves which are currently being investigated by researchers from Boise State University (Delisio 1977).

Some of the placer mining which occurred in historic times has destroyed a number of sites. Ironically, the evidences left by these destructive activities are themselves historic resources. A final source of adverse impacts occurring to prehistoric sites is "sanctioned" site destruction in the form of excavations by professional archaeologists (Shellbach 1967, Tuohy and Swanson 1960, Delisio 1977).

Historic. A historic site marks the location of some human activity which took place after recorded history began for a given area. It need not be a standing structure, but may take the form of buried artifacts or even a geographic location lacking physical remains where an important event is known to have occurred. Historic sites may best be described in reference to their associated time period.

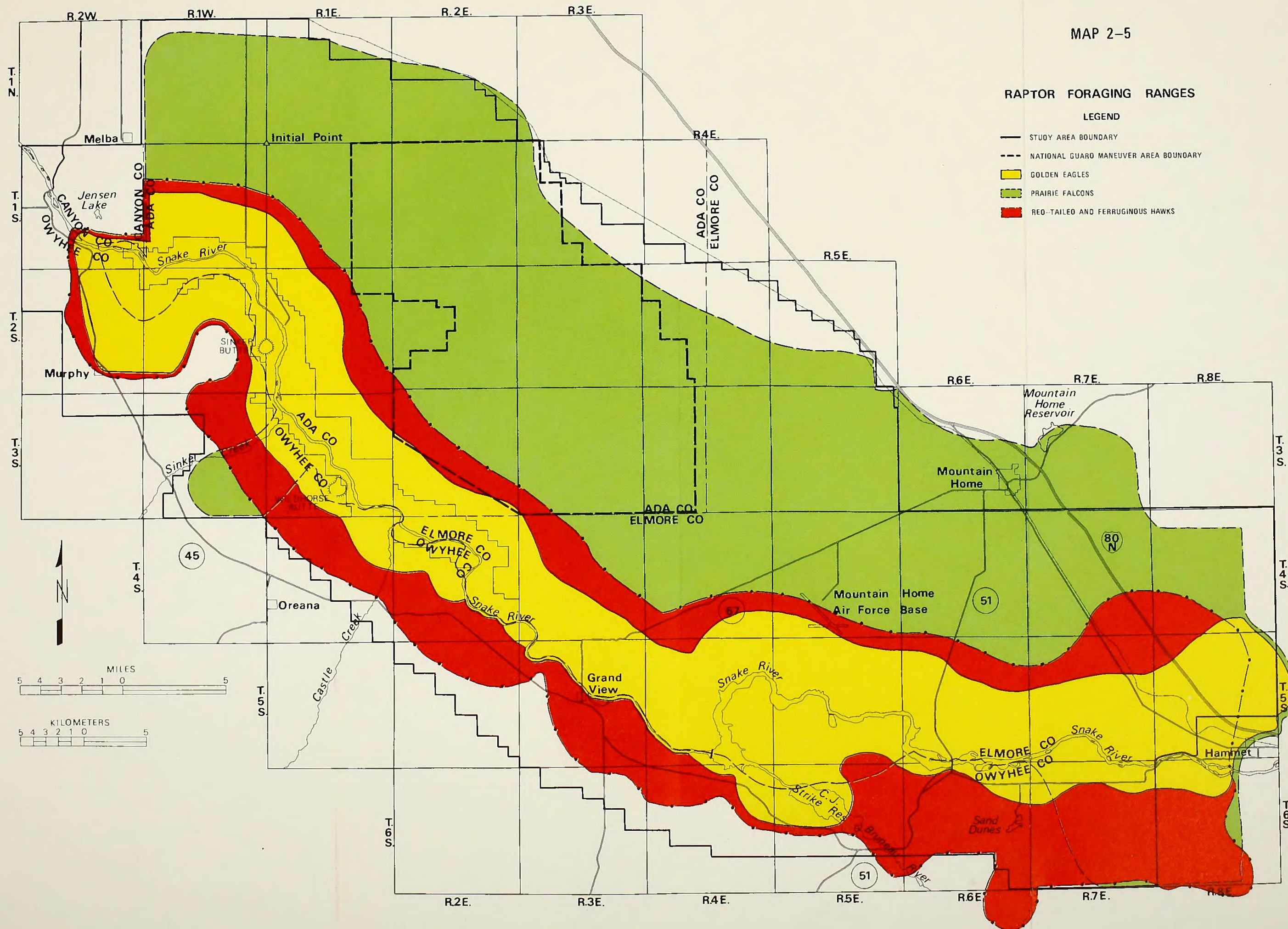
There are no specifically known camp sites of French, British, or American fur trappers or explorers in the Study Area from the early 1800's, although the Hudson Bay Company's exploitation of beaver in the area is documented. This is probably due to the fragile nature of the evidence of these activities.

The period of 1840 to 1860 is marked by the American acquisition of the Oregon Territory in 1846 lending further impetus to westward movement of emigrants along the Oregon Trail. Portions of the main route and the south alternate route of this National Historic Trail are present throughout the length of the Study Area. Map 2-5 illustrates the route of the Oregon Trail and the locations where wagon ruts are still visible. Several historic sites, including the scene of the Otter Massacre, have been recorded along the Oregon Trail in the Study Area. In addition, several campsites and emigrant graves are known to exist.

The discovery of gold and silver in the Owyhee Mountains and the Boise Basin in the 1860's stimulated settlement in the Study Area. A network of roads, railroads, stagelines, and river ferries developed to meet the needs of the miners. Evidences of these support activities are still present. Remains of later placer mining in the Snake River Canyon are also present.

This period also saw the rise of agriculture and early ranching as important industries in the Study Area. Chinese immigrants tapped Reynolds Creek by building dams and stone aqueducts in 1863, and Sinker Creek was also dammed and used for irrigation.

MAP 2-5



Railroads in the Study Area were limited and late in construction. The Union Pacific Railroad line was completed between Hammett and Nampa in 1884 and may have historical sites related to its construction along the route. The bed of the 1889 Boise, Nampa, and Owyhee Railroad remains, but the tracks were removed in the 1940's. The Guffey Railroad Bridge, completed in 1897, and the remains of two townsites for the way station of Guffey are still present in the Study Area.

The Guffey Railroad Bridge and townsite, a mining settlement near Halverson Bar, and the Swan Falls Dam (built in 1901) are all on the National Register of Historic Places. The Oregon Trail route through the Study Area is part of the National Trails System, and all existing ruts have been officially determined to be eligible for National Register listing (State Historic Preservation Officer pers. comm.). There are numerous other historic sites in the area which have been identified as eligible for nomination to the Register; however, no official determination of their eligibility has been sought to date.

The value of the historic sites in the Study Area lies in their potential for refining our knowledge of the sequence of events which led to the settling of the West. Accounts of specific people and events of local significance can be substantiated through the study of these sites. These sites also have social value for many residents in southwestern Idaho because they represent an important part of our national heritage. A large portion of current residents are descendants of early settlers and take pride in preserving old ranches, homesteads, etc.

Currently, several factors are impacting historical resources in the Study Area. These include livestock use, vandalism, weathering, and major repair to or removal of historic structures. In addition, portions of the Oregon Trail on both public and private land have been plowed up for farming.

Paleontological. The Study Area is considered to be one of the most significant regions for paleontological research in North America, having yielded numerous and varied fossil specimens. More than a dozen localities rich in fossil remains have been reported in this area (Map 2-5). Types of fossils recovered include seeds, leaves, fish, molluscs, and large mammals.

Scientists working in southwestern Idaho believe that vertebrate remains, of which fossil mammals are a type, have the most scientific value. The largest quantity of mammalian fossil material has been discovered in a layer of deposits known as the Glenn's Ferry Formation. The layer is found on both sides of the Snake River from just east of the town of Hagerman with outcrops found continuously as far west as the town of Homedale. This important layer of deposits is found in a large portion of the Study Area.

The area has not been adequately inventoried for paleontological resources, but present evidence suggests additional sites are present in the Glenn's Ferry Formation within the BPSA. The current incidence of vandalism to these fossil sites is also not known, but some indiscriminant collecting has been known to occur. Significant paleontological resources are protected under the Antiquities Act, the National Environmental Policy Act, and the Federal Land Policy and Management Act.

WILDERNESS

Under Section 603 of the Federal Land Policy and Management Act (FLPMA) the BLM is responsible for ensuring that all public lands, including those within the Study Area, are inventoried for wilderness characteristics as described in the Wilderness Act of 1964. Those lands with wilderness characteristics are to be managed during the study and reporting process required by Section 603 of FLPMA so as not to impair their suitability for preservation as wilderness.

Section 603 of FLPMA also identified the existing Snake River Birds of Prey Natural Area as an "instant" wilderness study area, thus distinguishing it from the remainder of the Study Area and the wilderness inventory process. Instant wilderness study areas are also to be managed during the study and reporting process required by Section 603 of FLPMA so as not to impair their suitability for preservation as wilderness, regardless of the presence or absence of wilderness characteristics.

The BLM issued final wilderness policy and review procedures pursuant to Section 603 of FLPMA on September 27, 1978, and is now in the process of inventorying wilderness resources within the Study Area. BLM personnel will identify roadless areas and islands and evaluate them for wilderness characteristics. Following an initial determination by BLM personnel, the evaluation report will undergo public review for a period of 90 days, including a mailout of the report and public meetings. As a result of the evaluation and public input a decision will be made on whether each roadless area or island has wilderness characteristics, thus warranting its identification as a wilderness study area.

In accordance with FLPMA and the policies and procedures established by the Bureau, the Idaho State Director of the BLM will identify wilderness study areas within the proposed Conservation Area by September 30, 1980, or sooner, if possible within limits of manpower and funding. Due to the length of time required for inventory and evaluation of areas and public review, the wilderness evaluation process cannot be completed for the Study Area within the limited time requirements for publication of this environmental statement.

AGRICULTURE

Grazing. The dominant agricultural use of the public lands and much of the private lands within the Study Area is livestock grazing. Sixty-six grazing permittees presently utilize public lands (in conjunction with National Forest, State, and private lands) to maintain yearlong cow-calf or sheep operations (Table 2-4).

The public lands are used primarily as spring, fall, and winter range for cattle. Summer grazing is supported on other BLM allotments, National Forest lands, or private lands. North of the Snake River cattle typically enter the area in early spring, remain approximately 2½ months, and are then trailed and trucked to National Forest or private lands to graze the summer season. They return to the Study Area around the middle of October. They graze on the fall range until mid-December and then are transferred to the winter range where they remain until the end of February. The livestock are then trailed to their home ranches and the cycle starts again in the spring.

TABLE 2-4
Livestock Use in Birds of Prey Study Area 1/

Allotment	No. of Permittees	Season Of Use	AUM's Cattle	AUM's Sheep	Total AUM's
Sunnyside/Winter	9	12-16 to 2-28	8,936	5,585	14,521
Sunnyside/Spring-Fall	19	4-1 to 6-15 10-16 to 12-15	15,506	8,938	24,444
Castle Creek	8	11-1 to 1-31	4,399		4,399
Battle Creek	1	11-1 to 1-31	276		276
Mountain Home/Sub-Unit	9	4-1 to 6-30 10-16 to 12-31	6,374		6,374
Chalk Flats	3	4-1 to 6-30 10-20 to 12-31	2,404	110	2,514
Rattlesnake Seeding	1	4-1 to 12-31	1,368		1,368
Crater Ring Seeding	2	4-5 to 6-4	748		748
Duck Pond	1	7-1 to 10-15	56		56
Rattlesnake Creek	1	4-1 to 6-15 10-16 to 11-30	221		221
Rabbit Springs	1	5-1 to 9-30	84		84
Pole Creek Individual	1	4-1 to 9-30	156		156
White Butte	1	3-1 to 4-15 11-15 to 12-28	67		67
Warm Springs	1	11-1 to 2-28	20		20
Fossil Butte	1	11-1 to 2-28	961		961
Nahas Individual	1	11-1 to 2-28	845		845
Oreana #1/Winter	1	11-1 to 2-28	525		525
Black Mountain	8	4-1 to 10-31	4,792		4,792
Saylor Creek	5	4-1 to 2-28 11-1 to 2-28			12,370
Hammett #3	1	11-1 to 2-28	240		240

1/ Some of these allotments encompass more area than just the study area; some permittees use more than one allotment.

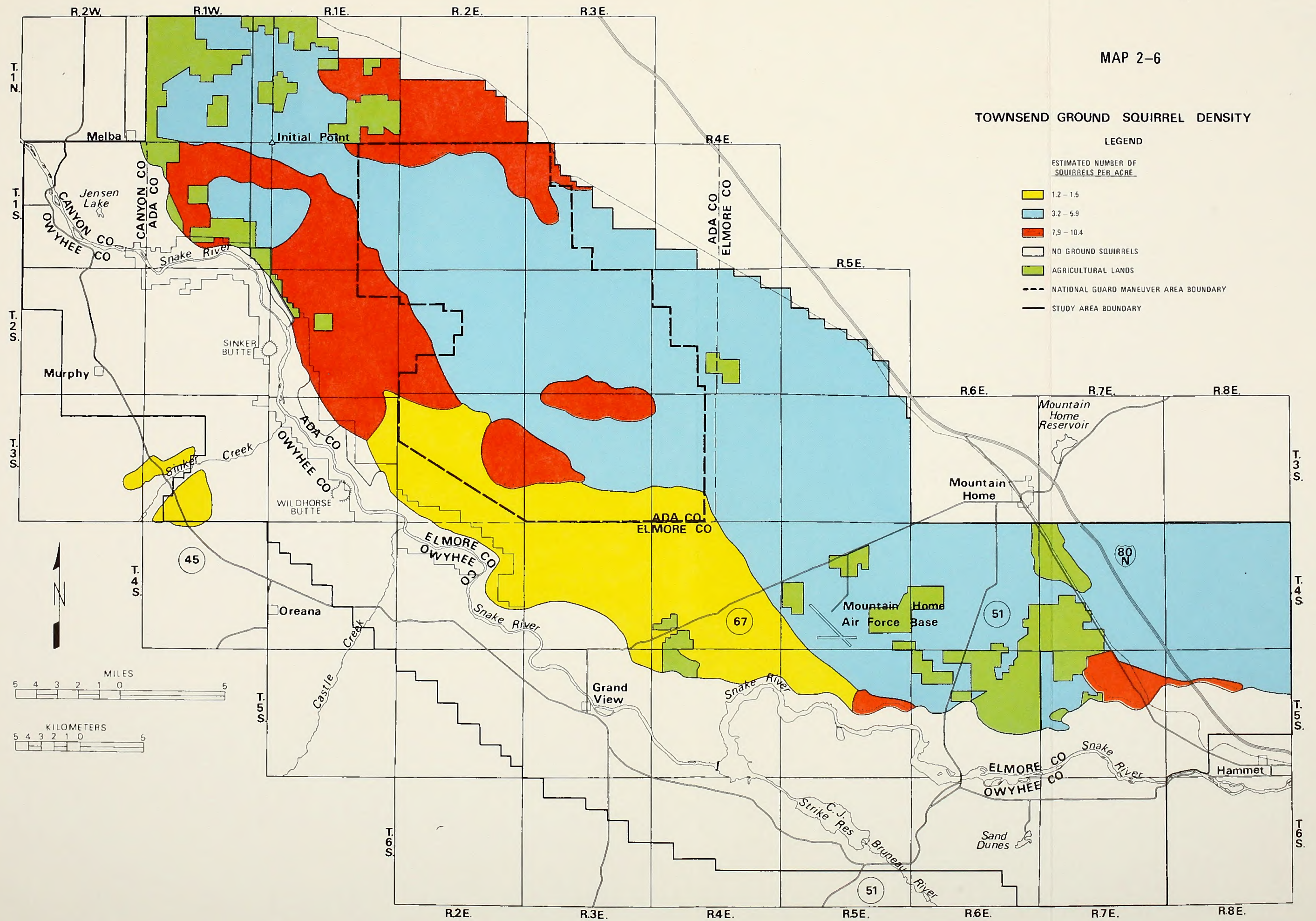
South of the river in the Study Area, the majority of grazing use is winter grazing. Livestock enter the area about the first of November and remain until the end of February. The cattle are trailed to the home ranches and do not return to the Study Area until the following winter. Both public and private lands south of the Study Area are used during other seasons of the year.

Sheep grazing in the area is currently limited primarily to three bands which use the area for short periods (two to three weeks) each spring and fall.

Farming. About 238,144 acres of the 833,000 acre study area is in private ownership. About 159,500 acres (68 percent) of these private lands are presently being farmed for potatoes, sugar beets, beans, corn, grain, and alfalfa. The area farmed currently represents 19 percent of the Study Area. The potential for agricultural development is much greater (about 46 percent of the total Study Area) considering the distribution of suitable soils and the theoretical accessibility of water through recent technological advances.

Because of this potential, 269 applications have been filed with BLM to transfer about 81,000 acres of public lands to private farming development under the authority of the Desert Land Act. In addition, 20 Carey Act applications, another method to dispose of public land for farming purposes, have been filed on 70,000 acres within the Study Area but the majority of them overlap the desert land applications (Map 2-6). A temporary moratorium on processing Desert Land and Carey Act applications is currently in effect (see Chapter 1).

MAP 2-6



RECREATION

The Study Area is a major scenic, geologic, and wildlife attraction in southwestern Idaho. The Snake River plateau and canyon is rich in various recreation opportunities that include sightseeing, camping, picnicking, boating, off-road vehicle (ORV) use, fishing, and hunting.

The Study Area is located within Region 3 of the 1977 Idaho State Comprehensive Outdoor Recreation Plan (SCORP). This region includes ten counties in southwestern Idaho. The Natural Area is listed within the SCORP as one of the nationally significant recreation resources within Idaho.

Although the total annual recreation use within the Study Area is not known, it was estimated in 1977 that approximately 11,500 recreationists visited the Natural Area and 52,100 recreationists visited the remaining portions of the Study Area along the Snake River from May to August (Recreation User Survey, Snake River Birds of Prey Natural Area and Study Area, BLM, 1977).

During 1977 the Bruneau Sand Dunes State Park within the Study Area (Map 2-1) received 71,981 visitors, mostly day users. The Idaho Department of Fish and Game has also conducted two Snake River fisheries investigations in the Area. The first, from March 22, 1971, to January 9, 1972, surveyed recreation use from Bernard's Ferry upstream to and including, C.J. Strike Reservoir. This survey estimated 39,777 days of

recreation use during the nine month census period. The following summarizes this use by section of river:

	<u>Angler Days</u>	<u>Hunter Days</u>	<u>Other Days</u>
C.J. Strike Reservoir	7,343	2,095	10,668
Strike Dam to Grandview	6,649	83	2,099
Grandview to Swan Falls Dam	2	368	232
Swan Falls Dam to Guffey	3,321	236	879
Guffey to Bernard's Ferry	<u>4,359</u>	<u>576</u>	<u>867</u>
TOTALS	21,674	3,358	14,745

The second fisheries investigation from March 1, 1975, to February 29, 1976, measured recreation use from the headwaters of C.J. Strike Reservoir at Loveridge Bridge to Lower Salmon Falls Dam. In this survey recreation use was measured in hours rather than days. For the portion of the census area within the Natural Area, 8,969 hours of use occurred during the twelve-month period. Of these, 3,663 were angler hours, 5,306 hunter hours, and 3,167 hours were from other recreation users.

Besides the Snake River Canyon and the Bruneau Sand Dunes, visitors are drawn to several other geological attractions in the Study Area. These include Crater Rings and Kuna, Higby, and Tank Caves.

Several recreation sites with day and overnight facilities exist at C.J. Strike Reservoir. One is the BLM's Cove Recreation Site; another is one administered by the Idaho Department of Fish and Game. The C.J. Strike picnic area, operated by the Idaho Power Company, is located adjacent to the dam. Camping use at this site is also popular. Just north of the C.J. Strike picnic area, the U.S. Air Force administers a

recreation facility. In addition, the Black Sands Resort is located on the southwest side of the reservoir. Additional camping and day use opportunities are available at Bruneau Sand Dunes State Park, eight miles northeast of the town of Bruneau. The Idaho Department of Fish and Game provides several boating access facilities on the reservoir and on the Snake River. There are no developed recreation sites within the boundary of the existing Natural Area. However, two popular locations, the Swan Falls and Halverson Lake areas, are being adversely affected by uncontrolled recreation use which is causing soil erosion and damage to the surrounding vegetation.

Several popular off-road vehicle (ORV) areas are partially within the Study Area. These include areas near Murphy, Hammett, Oreana, and Browns Gulch. Weekend unorganized ORV use is common in each area, and every year the BLM issues several permits for competitive motorcycle events in portions of the Study Area. To protect nesting birds in season and to protect natural values year round, the BLM has established a year round closure to vehicle travel off of designated roads in the Natural Area. Control of ORV use has been contracted to the Ada County Sheriff's Department by BLM.

Hunting activities primarily involve waterfowl and upland bird shooting. To protect the birds of prey during nesting and brood rearing, a shooting closure has been established by BLM within the Natural Area from March 1 to August 31, each year. The Idaho Department of Fish and Game has also established a hunting closure in the area each year from March 1 to August 31. Some recreational trapping also occurs within the

Study Area. At the request of BLM the Idaho Department of Fish and Game created a regulation prohibiting the use of exposed baits or lures within the Study Area.

The BLM has also established an airspace closure over the canyon areas annually from February 1 to September 1 to prevent disturbance of nesting birds of prey by low flying aircraft.

NATIONAL GUARD ACTIVITIES

The Idaho National Guard conducts military maneuvers on 122,600 acres of public land within the Study Area under a permit from the BLM (Map 2-1). Their maneuver program has been gradually expanding over the past few years because facilities for such activities are becoming limited nationally. Units are now coming from as far away as the east coast states to use this area. The eastern states apparently have few areas where heavy artillery can be fired without risk to or complaint from the general public.

The present activities, which are concentrated in June, July, and August, involve firing of tank cannons, mortars (which reach as high as 12,500 feet above the terrain), and other field artillery. There are extensive tank maneuvers, personnel movements, and bivouacing. Much of the activity is weekend reserve training with numerous two-week summer camps. Twenty-five years of military use in the Study Area has not caused any known major adverse effects on the birds of prey.

MINERALS

The following information is based largely on the USGS mineral report and the BLM mineral report (under preparation) for the Study Area. North of the Snake River the Study Area is underlain by flat lying basalt flows. South of the river from Bruneau to Murphy sedimentary silt, sand, gravel, clay, and ash are frequently exposed. Fourteen permits for the removal of sand, gravel, and cinders are presently issued.

Of the various minerals subject to location under the Mining Law of 1872, only clay and placer gold have been identified within the Study Area. The Pullman Brick Company has two mining claims located for clay which is used to add strength and color to bricks. The claims reportedly produce about 13,000 yards of clay annually. Fine placer gold has periodically been recovered from the Snake River, but there are no profit making operations currently in existence within the Study Area.

The USGS has classified large portions of the Snake River Plain as prospectively valuable for oil, gas, and geothermal development. These are the only leasable minerals believed to occur within the area. There are 50 oil and gas leases covering 78,270 acres in the Study Area; more than 50,000 of these acres are also included in the Castle Creek Known Geothermal Resource Area (KGRA) which is situated generally northwest of Grandview and south of the Snake River. In the Castle Creek KGRA there are 17 geothermal leases covering an estimated 25,800 acres. Although test wells have penetrated the enormous Bruneau-Grandview hot water aquifer in the general vicinity, none have been drilled within the Study

Area. Work on 15 oil and gas applications covering 25,700 acres and on 7 geothermal lease applications covering 12,270 acres has been suspended until the birds of prey research is completed.

SOCIO-ECONOMICS

Four rural villages -- Murphy, Bruneau, Grandview, and Melba -- containing some 840 people who economically depend upon livestock grazing and farming are found within the Study Area. Although there are no major industries in the Study Area, the Mountain Home Air Force Base serves as a source of employment. Boise, the largest urban area in the state, also provides employment opportunities. The grazing permittees are the primary users that depend upon the public land for a livelihood.

Social Attitudes

Three general categories of concern associated with the Study Area will be described in this section. They are: 1) agricultural; 2) attitudes toward the Natural Area; and 3) attitudes regarding the existence of the Study Area. These three concerns, of course, are interrelated. But, for the purposes of discussion and descriptive analysis they will be treated separately.

Five general groupings of people with attitudes toward/about these areas of concern will be considered. They are: 1) the general public; 2) ranchers and farmers; 3) local urban residents; 4) local rural

residents; and 5) groups/individuals with special environmental or conservationist concerns and interests. It is to be noted that these groupings are neither rigid nor mutually exclusive.

Agriculture. For the past 90 years agriculture has been a major component in the economic as well as the socio-cultural composition of Idaho. Its influences have encouraged the development, within the long-term residents of the State, of a generally conservative political posture, a strong sense of independence, a pride in ingenuity (being able to fashion ideas as well as objects to fit personal needs), a reluctance toward government regulations and intervention, and a deep interest in land use matters.

It was concluded from information gathered in inquiries and personal interviews that the continued development of irrigated farmlands has strong, but not unanimous, support from farmers, ranchers, rural residents, and those urban residents who lived in Idaho prior to 1970. The rationale behind the position of people in these diverse groups is consistent with the distinguishing character of the rural, western United States socio-cultural environment. This position argues that the development of irrigated farmland and livestock grazing is unquestionably of great benefit, not only for the individual farmer/rancher, but also for all those who are dependent on agricultural products for food and clothing. Therefore, government regulations and controls should encourage, not discourage, development. And because people are the ultimate beneficiaries of agricultural production, people should support agricultural development policies.

Those opposing intensive farm development, again from several types of groupings, also have justification for their positions -- justification which emphasizes human benefits. The Idaho Conservation League, in its 1977 publication, points out that for the benefits of all concerned -- farmers, ranchers, and the general public -- a thorough analysis of developments and their impacts is needed. Unless this is done, the Idaho Conservation League maintains, the "costs" of development may be far more expensive than its value (Idaho Conservation League 1977). Other groups contend that since agricultural development will have adverse impacts on the birds of prey, development has to cease to maintain local, regional, national, and international benefits derived from this unique habitat area. They would also argue that continued intensive agricultural development in this fragile area may not be in keeping with national agricultural production policies.

Birds of Prey Natural Area. A general consensus of all groups exists with regard to approval and acceptance of the Natural Area. There are those who resent it -- but they appear to constitute only a small minority of the population.

A basic reason for the consensus is, simply, that people like having the birds of prey around. Ranchers and farmers value the birds since they help control the squirrel and rabbit populations. The general public and rural/urban residents evidently appreciate the presence of the birds from an aesthetic viewpoint that, in some cases, has its possessive aspects. For instance, during conversations people frequently would mention "our birds," "our eagles," or "our sanctuary."

People not only appreciate seeing the birds in the Natural Area environment, but they like seeing them while driving on business or pleasure trips and during family outings.

Members of special interest groups, such as the National Wildlife Federation, the Sierra Club, the National Audubon Society, and others, strongly approve of the Natural Area. Its existence provides for scientific study as well as for aesthetic appreciation. Numerous float trips each year through the Natural Area are sponsored by study groups located both in and outside of Idaho.

In 1971, when the Natural Area originally was established, there was a certain amount of resistance expressed by local area residents. Letters to the newspaper editor in Boise (Idaho Statesman), to the BLM Boise District, and comments made at public meetings in opposition to the Natural Area designation were strong. However, much of the resistance was rooted in concerns over a water storage/electrical generation plan that did not materialize and not the Natural Area as it presently exists.

In contrast, the BLM has received in the last seven years over a thousand letters from 30 states and Washington, D.C. -- plus Hong Kong, Great Britain, Republic of South Africa, West Germany, and Canada! -- that supported the Natural Area.

Birds of Prey Study Area. While the Natural Area is generally accepted, this is not entirely the case with the expanded Study Area. Representatives of farmer/rancher/rural resident groupings, for example,

are quite severe in their criticism. To some of these people, the Study Area with the concomitant moratorium on Desert Land Entry is seen as an infringement by "outsiders" (government, conservation groups, and individuals) on the traditional rights of local people to make decisions for themselves. To others, the existence of the Study Area is not, by itself, an issue.

There are those who feel that the Study Area exemplifies the insensitivity of a centralized bureaucracy to local traditions, values, and needs. They observed that, prior to the 1970's, the BLM Boise District consisted of a small "easy to get along with" group of people who frequently met with and listened to local people. Since early in the 1970's, however, they have seen the District grow into a bureaucratic agency which is "more concerned with Washington policies" than with "working with local people."

According to one rancher the Study Area is "just a step toward greater control by the federal government." He elaborated, pointing out that "first it was the canyon Natural Area, then the rim Study Area, and who knows what else will come later?"

During a survey of range conditions in 1977 between the BLM and livestock permittees in the Study Area, one rancher stated that "if it hadn't been for the birds of prey and the Study Area, we wouldn't have any winter range for livestock, because it would all be under Desert Land Entry by now. Those of us that depend on this range out here ought to get together and support BLM in protecting this area."

Educational and informational efforts associated with the Study Area also were criticized by the rancher/farmer/rural resident groupings representatives. In a number of cases the criticism was not stimulated by opposition to the Study Area as much as by concern that the result of the educational/informational efforts would produce "more visitors, more trash, more fires, and more trouble."

Several were aware of the contents of an article published in a nationally-circulated magazine that favored the establishment of the proposed Conservation Area. These people severely criticized the article for the way in which it demeaned the farmers and ranchers in terms of their knowledge of and concern for ecological matters. "We're sick of being portrayed (in articles of this type) as people who rape and abuse land. Ranchers and farmers always have been conservationists -- they have to be; their survival depends on it."

People classed in the the urban and general public groupings were generally supportive of the Study Area. As a rule, they were far less knowledgable about the specifics of the area than were the ranchers/farmers, but they understood what it was. Illustrative is a comment from one urban resident: "There should have been a study like this a long time ago."

Residents in Boise and throughout southern Idaho have had access to a number of feature articles published in newspapers, and to programs broadcast by television stations on scientific studies in the BPSA. BLM personnel have met and talked with several thousand people -- including

appearances in school classrooms -- to explain and answer questions about the raptors, the uniqueness of the area, its value and scientific studies.

This generally supportive position of the general public and urban residents, however, is based on the premise that the BPSA is a special scientific project of a temporary duration.

Members of the environmental groups strongly supported the existence of the Study Area. They maintain that the BLM, as an agency of the Federal Government, is obligated to maintain the Study Area in the national interest. In the words of one respondent: "When it became clear that the raptors needed the rim lands for hunting and feeding, BLM had no choice. To preserve the concept of the Natural Area, it was necessary to set rim land aside."

Concerns regarding the importance of "outside" involvement were frequently expressed. "Local people aren't really aware of the extent of national interest in this," one respondent explained, adding, "if they knew, I'm pretty sure they'd all want it."

Several observed that the general public in Idaho supported the Study Area far more strongly than the local residents. Explaining the reason for this, a respondent mentioned that "certain local issues have muddied the water and there's some confusion -- as things settle down there will probably be a lot of local support" for the Study Area.

The activities of the BLM in providing information about the Study Area were mentioned by a number of informants in the special interest and concern groupings. "By going to the schools BLM has conveyed, through the children, a lot of important information to local adults," one proponent observed.

Many also pointed out the need for additional activities. Illustrative of a common concern was one statement: "It's awful to see the way signs are shot up and garbage is strewn around in the Area. The BLM should have the right to get guards and fences if necessary." Several compared the importance of the Study Area to a national park, "like Yellowstone," saying that "Congress should give BLM the authority it needs to protect the area."

DESCRIPTION OF THE FUTURE ENVIRONMENT

WITHOUT THE PROPOSED ACTION

INTRODUCTION

The future of the Study Area is closely associated with the use and development proposed for the river and adjacent lands. The Idaho Department of Water Resources has developed a water plan (IWRB 1976) that calls for conversion of one million acres of desert to irrigated farmland by year 2020 and the construction of associated hydropower dams to supply the energy needed to implement this plan. As a result, the Snake River and surrounding uplands would undergo pronounced change from their present condition.

Assuming that farms would be sprinkler irrigated, with no return flows, major adverse impacts on water quality of the Snake River and tributaries in the Study Area would include slight (1-10 percent) increases in turbidity, suspended sediments, pesticides, phosphates, and heavy metals, and moderate (11-25 percent) increases in conductivity and nitrates. These increases would promote noxious algal blooms and deplete dissolved oxygen supplies essential to fish. Such changes in water quality would be detrimental to fish populations and other aquatic fauna of the area.

Flow reductions of the magnitude anticipated would markedly reduce habitat for all fish species, especially edge-spawners such as smallmouth bass, channel catfish, and black crappie. Fish growth would be reduced. Adverse impacts would especially be pronounced in white sturgeon production as this species is not found in smaller flow volume rivers.

WILDLIFE

Within the Study Area, there are an estimated 379,200 acres of desert land with potential for irrigated farm development. Since the BLM's past record indicates that they process applications for farming under the Desert Land Entry and Carey Acts, it is assumed that some public land having potential for cultivation would be farmed.

The conversion of existing rangeland to irrigated farmland would result in a shift from those wildlife species that utilize the existing habitat to species that are agriculturally oriented, such as pheasants, Hungarian partridge, quail, etc. The most significant loss would be that of the food source for the birds of prey. Without this food source, all the birds of prey, but especially the prairie falcon, would be adversely affected. The overall raptor population would decline, nesting species would desert the area, scientific research opportunities would be forgone, and a nationally and internationally unique wildlife resource would be lost.

VEGETATION

The present vegetative setting has evolved under the same conditions that have existed in the Study Area for the past 40 to 50 years with the exception of recent farm development, military maneuvers, and occasional burning. The vegetative community in most areas used for military maneuvers and livestock grazing would remain the same. On lands converted to farming, the natural vegetation would be removed completely and replaced with sugar beets and potatoes initially, and with alfalfa and

grain crops within the next several years. Habitat for threatened or endangered plants on farm units would be destroyed.

Another adverse effect would be felt by the small rodents and other wildlife that depend on the natural vegetation for food and shelter.

CULTURAL RESOURCES

It is anticipated that under present management practices cultural resources in the Study Area will continue to be impacted by vandals and natural forces such as erosion. Visitor use of the Study Area has been steadily rising and will probably continue to do so. This increased potential for vandalism must be countered by implementation of cultural resource protection plans.

Large scale farm development would eliminate cultural sites presently occurring on potential farmlands within the study area. Any additional dams built within the Study Area would have serious impacts on cultural resources (especially the rich concentrations found within the canyon area), and the data base which they provide.

WILDERNESS

The existing Snake River Birds of Prey Natural Area was identified as an "instant" wilderness study area in Section 603 of FLPMA. Additional areas and islands within the proposed Birds of Prey National Conservation Area may be identified as wilderness study areas as a result of the wilderness inventory and evaluation process. Such areas

must be managed during the study and reporting process required by Section 603 of FLPMA so as not to impair their suitability for preservation as wilderness.

Therefore, during the lifetime of the wilderness inventory and evaluation process, and until such time as all study and reporting requirements have been met, the condition of wilderness resources within the existing Natural Area and other identified wilderness study areas will remain essentially unchanged.

AGRICULTURE

The Study Area was established by a temporary moratorium, which suspended the processing of Desert Land and Carey Act applications, oil, gas, and geothermal leases, and other activities that would adversely affect the birds of prey until the BLM could complete its birds of prey research. When the moratorium is lifted, the Natural Area, 26,714 acres of public land, will be managed in such a manner so as to protect birds of prey nesting and wintering habitat. The 122,600-acre military use area will remain unavailable for other uses. The remaining 389,652 acres of public land would be managed on the basis of multiple use and sustained yield as specified in the Federal Land Policy and Management Act of 1976.

Under this concept of management, the public lands would be subject to a multitude of uses including, but not limited to, disposal for farming purposes under the Carey and Desert Land Acts. The extent of

farm development is not known at this time, but any large scale development on public lands would go to a BLM planning and environmental process before it could be developed. Livestock grazing would continue, but would be reduced if large areas of rangeland are converted to farms.

RECREATION

Some public lands within the Study Area are expected to be lost to open space recreation uses due to the conversion of public lands to private farms under the Carey and Desert Land Acts. The natural landscape would be affected by farm and associated developments which would affect scenic values. Impacts on scenic values would not only be onsite (areas under cultivation) but also offsite due to the development of facilities needed to serve the farms, such as roads, powerlines, pump sites, pipelines, etc. The scenic Snake River corridor would be especially degraded by the development of additional irrigation pumps and penstocks. Viewing enjoyment of the birds of prey would also be diminished due to loss of habitat and the subsequent decrease of bird numbers. Fishing and boating opportunities would be adversely affected by lower water quality and quantity resulting from the irrigation of farm lands.

In contrast, however, opportunities to hunt pheasants, Hungarian partridge, quail, and waterfowl would be enhanced if agriculture was developed in the Study Area and adequate cover was retained on BLM land next to the farmed land.

The 1977 Idaho State Comprehensive Outdoor Recreation Plan estimated that the recreation use in Idaho will double in the next 25 years. A

similar increase in recreation use is expected to occur in the Study Area. This increase in recreation use is expected to reduce the recreational value of the area if littering, vandalism, off-road vehicle use, etc., are not controlled.

NATIONAL GUARD ACTIVITIES

The present 122,600-acre National Guard Area would continue to be used for this purpose unless national emphasis for these lands shifted from defense to farm development.

The BLM is currently developing a draft cooperative agreement regarding future use of the area by the National Guard. Weekend training occurs from February to late November and two-week exercises take place during the summer months. The cooperative agreement will contain a clause stating that if any military activity is found to be detrimental to the birds of prey, in the future, such activity will be curtailed or otherwise modified.

MINERALS

Production of minerals can be expected to remain relatively stable depending on annual market demand for those materials. Barring any major oil or gas discoveries, or advancements in geothermal engineering technology, future activity with respect to those resources would be confined to leasing, with no major production. In the past few years, several geothermal test wells have been drilled in the vicinity of the Study Area. As leases reach maturity, it seems quite probable that

further testing of the Bruneau-Grandview aquifer, including within the Study Area, will be done.

SOCIO-ECONOMICS

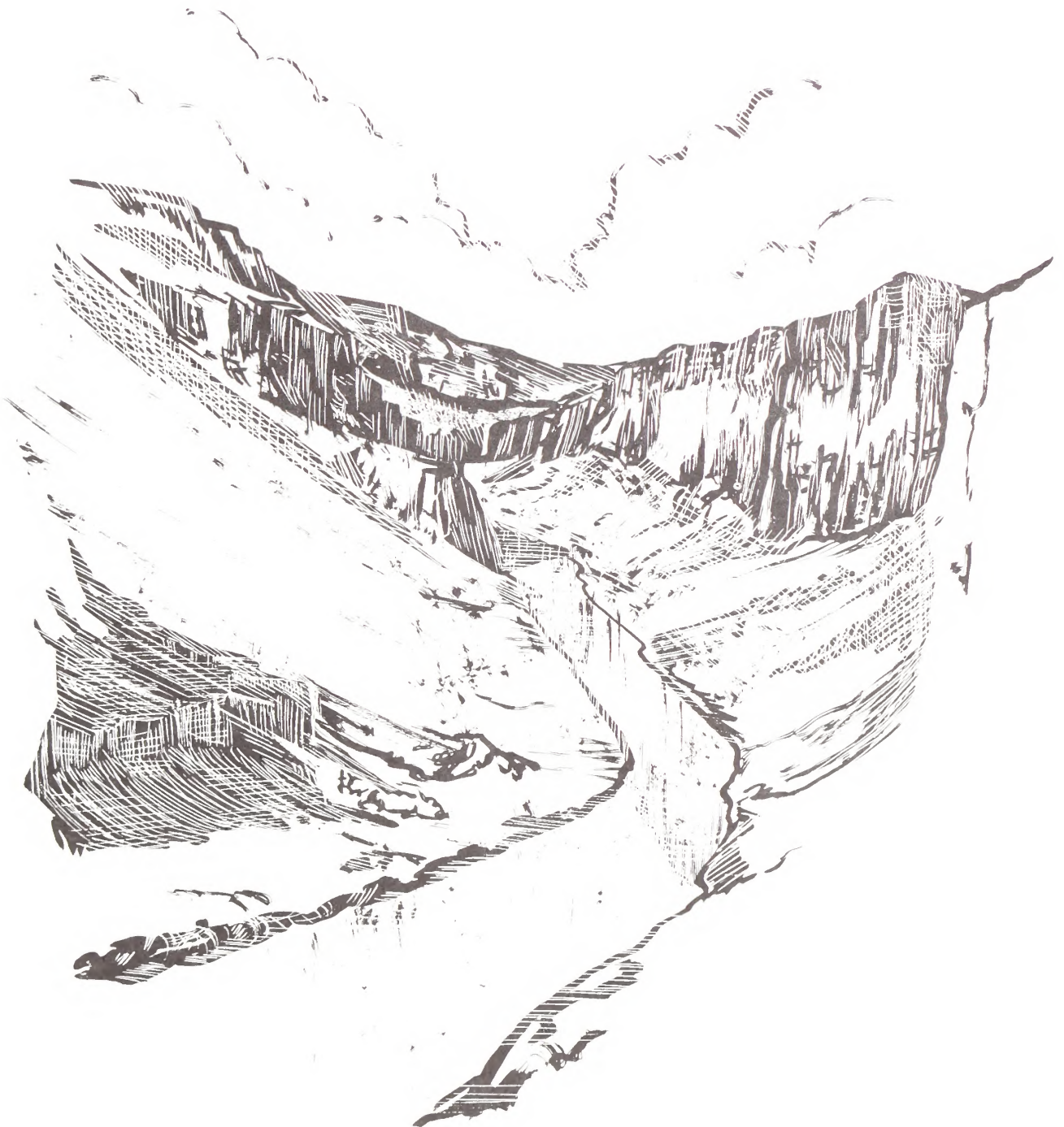
The Study Area is expected to retain its rural character and economic dependence upon agriculture. However, livestock grazing of public land would decline if public grazing land is converted to private farm development under the Carey and Desert Land Acts. This would result in economic losses to the grazing permittees, while it will increase economic opportunities for farmers.

Discontinuation of the moratorium on intensive farm development would result in the BLM processing applications for agricultural entry. It is impossible to predict how widespread this development will be. People concerned about the harm agricultural development causes to the food sources for the birds of prey would hold BLM responsible. BLM could very easily become -- in the opinion of many of the region's residents -- the "bad guy."

Attitudes in the future without the proposed action would not be basically much different than they are at the present.

CHAPTER 3

ENVIRONMENTAL IMPACTS OF THE PROPOSED ACTION



CHAPTER 3

INTRODUCTION

The positive impacts of formal establishment of the proposed Snake River Birds of Prey National Conservation Area include the following:

1) a total ecosystem, including particularly unique geologic, soils, vegetation, and wildlife interrelationships will be permanently protected; and 2) through implementation of a thorough multiple-use/sustained-yield management plan, the biological, cultural, archaeological, recreational, scenic, and other resource values of the area will be fully considered and emphasized. The principal negative impacts of establishing the proposed Conservation Area are: 1) the loss of farming, but not grazing, potential in the area (i.e. curtailment of land conversion from native conditions to cropland pursuant to the Desert Land and Carey Acts); 2) an increase in visitor use of the area that will require increased educational and control efforts; and 3) prohibition of future entry, location, and patent of public lands under the 1872 Mining Law. Each of these impacts is discussed more thoroughly below.

IMPACT ON WATER RESOURCES AND FISHERIES

As mentioned above, the proposed action would prohibit new large scale farm development on 325,000 acres of farmable public lands and would double visitor use of the area. No additional farming would maintain the present water quality and flow of the Snake River, as well

as continue the opportunity for water related recreation and safe, human water contact. The production of the current fishery would also be maintained.

The primary impact of the proposed action on fisheries would result from the projected doubling of recreational use of the area. Fishing use within the proposed Conservation Area has increased by 40-50 percent in the last decade, and use of the area with or without the proposed action would still increase, based on this trend.

Present angler use accounts for 54 percent of the recreational use. This angler use is concentrated in the C.J. Strike area where the warm-water fish species such as bass, bluegill, and channel catfish prevalent in that area are less susceptible to fishing pressure and fishing access is limited. A considerable increase in angler use beyond projected levels would have to occur before a significant impact on fish population numbers would occur. If increased fishing pressure began to significantly decrease game fish populations, adjustments of present fishing regulations by the Idaho Department of Fish and Game would be used to enhance game fish populations.

In conclusion, there would be no adverse impacts resulting from the proposed action on the fishery and water quality in the proposed Conservation Area. Beneficial impacts would include maintenance of the existing fishery and preclusion of some land uses which would adversely affect fisheries, such as large scale farm development.

The scope and uniqueness of the wildlife values to be protected by establishment of the proposed Conservation Area are thoroughly described in Chapter 2. Basically, the crucial foraging and nesting areas for eagles, falcons and other birds of prey will be protected so that the present densities of these species are maintained in perpetuity. Habitat for 244 other species of wildlife will also be maintained. The designation will allow the implementation of a management plan to protect the complete ecosystem, including the control of activities that might adversely affect the birds of prey, their prey, and the habitats on which all of the wildlife depends.

While the proposed action will benefit many existing species of wildlife such as songbirds, reptiles, raptors, rodents, and large and small mammals, it will reduce the opportunity to increase the habitat base for certain agriculturally oriented species that presently occur only in limited numbers in the proposed Conservation Area. Some of these species, such as the ring-necked pheasant and Hungarian partridge, are considered highly beneficial by many individuals and groups in southwestern Idaho. These sportsmen are encouraging the development of well designed farm units interspersed with existing vegetation on BLM land. They feel this type of development can help offset the ongoing loss of agricultural habitat to urban sprawl in southern Idaho. BLM and other studies show that upland gamebirds will increase if small areas of agriculture are developed and adequate existing vegetation is retained for cover. The effect of the proposed action will be to limit this type of wildlife activity by precluding further irrigated farm development of public lands (see below).

Since two endangered wildlife species inhabit the proposed Conservation Area, formal consultation under Section 7 of the Endangered Species Act of 1973 was initiated with the U.S. Fish and Wildlife Service. Of concern was the effect the proposed action would have on the bald eagle and peregrine falcon. On January 23, 1979, the U.S. Fish and Wildlife Service issued a biological opinion stating that "...the proposed enlargement of a permanent Birds of Prey National Conservation Area in southwestern Idaho will likely promote the conservation of the two species."

The most significant negative impact of the proposal on wildlife likely will be the increased public use of the Conservation Area. This would bring nearly twice as many people in closer contact with the birds of prey and other wildlife which could result in stress, disturbance, and nest abandonment. A potential exists for an increase in the number of man-caused fires, some of which may affect prey habitat. In the last 10 years, an average of 12.9 fires burning an average of 5,871 acres per year has occurred. With proper management of visitor use, however, these potentially adverse impacts would be lessened, and few incidents would occur that would result in destruction of wildlife, habitat, or other environmental values.

In conclusion, the proposed action would permanently protect the crucial ecosystem upon which the densest known nesting population of falcon, eagles and other birds of prey in North America depends for food, shelter, and continued propagation of their species. The conservation of two endangered species would also be better ensured. The designation would ensure that the proposed Conservation Area remained a hospitable environment for present and future generations of birds of prey -- and people!

The proposal, however, will reduce the opportunity for increasing the habitat base for agriculturally oriented upland game birds such as the ring-necked pheasant and Hungarian partridge.

IMPACT ON VEGETATION

Official designation of the proposed Conservation Area will maintain the existing mosaic patterns of big sagebrush, winterfat, shadscale, budsage and assorted grasses, for the most part, provided grazing intensities and use of the area by the National Guard do not increase significantly. Because current raptor populations remain high, maintenance of existing vegetation would be a logical management objective.

Over the long-term, however, the management plan for the Conservation Area must include measures to prevent the total vegetation resource from growing toward a homogeneous successional stage that might not support large numbers of Townsend ground squirrels and other raptor prey. Designation of the Conservation Area without provision for developing such a management plan for vegetation could cause adverse successional trends. This is the main reason that protection of the wildlife resource in the proposed Conservation Area is compatible with multiple-use management.

In conclusion, the proposed action would mandate such a multiple-use plan as discussed above. This would ensure continuance of a diversity of vegetation which supports the food source for the large population of birds of prey. The unique white sage community described in Chapter 2 would also be maintained. In addition, habitats for 2 threatened and 3 endangered plant species (involving about 1 acre) in the proposed Conservation Area would be protected.

IMPACT ON CULTURAL RESOURCES

For the sake of clarity, it is important to differentiate between the terms "effect" and "impact" in relation to cultural resources. Designation of the proposed Conservation Area would have no direct effect or impact on cultural resources; however, increased visitor use would be an acknowledged effect of the proposed action which may have the impact of increased vandalism and traffic over cultural sites. It is generally accepted by the archaeological community that there exists a definite relationship between the number of people in an area and the amount of vandalism occurring to cultural sites. "Any action... that would lead to an increase in the intensity of use of an area would potentially have a significant adverse impact on archaeological resources" (Schiffer and Gumerman 1977).

Because there are National Register properties within the proposed Birds of Prey Conservation Area (see Chapter 2), the State Historic Preservation Officer was contacted in regard to Section 106 of the National Historic Preservation Act of 1966. In a letter dated January 1979, the SHPO indicated that the proposed designation would not adversely affect property eligible for or listed on the National Register of Historic Places.

In conclusion, designation of the proposed Conservation Area would have some positive effects on activities relevant to cultural resources within the area. Several sites are presently undergoing severe damage caused by erosion due to vehicle traffic over the sites. If designated, the Conservation Area management plan would surely limit traffic routes.

Many destructive alternate routes would be blocked, thus having a beneficial impact on cultural resources. In fact, the possible beneficial impacts of the designation will outweigh adverse impacts.

IMPACT ON WILDERNESS

The location and extent of wilderness resources on 538,966 acres of public land within the proposed Conservation Area is not known at present. Pending the formal inventory and evaluation of wilderness resources, all public lands will be managed so as not to impair their suitability for preservation as wilderness (see Chapter 2).

Congressional designation of the proposed Conservation Area would in any event, provide complementary protection for potential wilderness area. In short, no adverse impacts will result to wilderness resources if the proposed action is implemented.

In conclusion, wilderness resources in the proposed Conservation Area would be significantly enhanced and protected.

IMPACT ON AGRICULTURE

Grazing. The establishment of the proposed Conservation Area would allow domestic grazing of cattle and sheep to continue under the Taylor Grazing Act and would not affect the present level of 65,000 AUMs in grazing privileges. Management objectives under the proposed Conservation Area are for the 66 livestock permittees currently utilizing the public lands in their livestock operations to continue to do so. This use will

maintain present vegetative composition with resulting benefits to Townsend ground squirrels, other rodents and mammals, and ultimately the birds of prey.

Farming. The large-scale conversion of 325,000 acres of public land to private farm development would be excluded from the proposed Conservation Area. The present 196 Desert Land and 19 Carey Act applications (together covering more than 64,000 acres) would be rejected. These applicants would lose the opportunity to acquire undeveloped public land for farming at a relatively inexpensive cost (\$1.25 per acre under DLA) when compared to the cost of purchasing undeveloped private land (\$200 to \$300 per acre). No new applications would be accepted. Therefore, the opportunity to farm lands within the proposed Conservation Area would no longer be available. This would be in harmony with objectives of the present management plan for the maintenance of vegetation and wildlife habitat in their present natural state. However, more than 600,000 acres in southern Idaho outside of the proposed Conservation Area are currently under application by as many as 1,800 applicants for disposal under the Desert Land and Carey Acts for farming. An additional several thousand acres are potentially available for this purpose also.

In conclusion, the proposed action would ensure the livelihood of the sixty-six grazing permittees presently using public lands by precluding alteration of the native public rangelands. In not allowing large scale conversion of native rangeland to farms, the proposed action would protect the vegetative resource and its dependent wildlife from destruction,

and promote long-term protection of the birds of prey. Future opportunities for farm development in the proposed Conservation Area would be forfeited.

IMPACT ON RECREATION

The primary impact of the proposed Conservation Area would be to ensure that present outdoor recreational opportunities associated with undeveloped public land would continue in the foreseeable future. This is especially important in regard to the wildlife oriented recreational opportunities such as bird watching, hunting, and fishing.

Since the designation will prohibit future farm development in the proposed Conservation Area, the visual resources of open vistas and scenic canyons will be protected from alteration. Structures associated with farming such as buildings and powerlines on the flats, and pump stations and pipelines in the canyons will not intrude on the natural setting.

Although recreational use of the area is expected to double with or without the proposed Conservation Area, the designation may further increase recreational use due to publicity and informational programs associated with the birds of prey research. The anticipated rise in recreational use is expected to increase the present recreational problems of unauthorized off-road vehicle use, and litter. Increased visitor use near nesting sites could increase disturbance of the birds of prey as discussed previously in this chapter. While the present management

plan provides for public use and enjoyment of the area, it also provides for increased law enforcement efforts and accelerated public information programs to control and reduce present and future impacts of increased visitor use on the recreation resource and the birds of prey.

Since the proposed action prohibits farm development, the habitat base for agriculturally oriented wildlife species will not be increased. Therefore, hunting opportunities of upland gamebirds and waterfowl will not be increased.

In conclusion, the proposed action would protect the present recreation and visual resources from alteration by farm development. However, the proposed action is expected to double visitor use to the area with resulting increases in unauthorized off-road vehicle use, litter, and potential disturbance of nesting raptors. This increase in visitor use could have the most adverse impact on the birds of prey under the proposed action depending on type, season, and location of nesting activity and visitor activity. Intensive use of the area by visitors during the nesting season could harass the birds into abandoning their nests, thereby reducing the nesting success and young produced. Nest abandonment later in the season could also cause increased mortality in young birds.

Present management objectives take increased future visitor use (after establishment of the Conservation Area) into consideration by providing for control of activities affecting raptors such as shooting,

off-road vehicle use, and controlling the increased influx of people through public education, signing, and law enforcement patrols. Should levels of visitor use become potentially harmful to the birds of prey, additional law enforcement, and restrictions on recreational activities affecting the birds of prey during essential nesting and brooding periods, would be incorporated into the management action and plan for the proposed Conservation Area.

IMPACT ON NATIONAL GUARD ACTIVITIES

The Idaho National Guard has been conducting military exercises in the proposed Conservation Area since 1953. The present BLM permit allows for military use and maneuvers on about 122,600 acres of public land. The BLM is presently negotiating with the Idaho National Guard to develop a long-term cooperative use agreement to supplant the existing permit.

Since the military use does not adversely affect the birds of prey, in keeping with the management goals for the proposed Conservation Area this use would be allowed to continue.

In conclusion, the National Guard military activities on public land within the proposed Conservation Area would continue into the foreseeable future.

Establishment of the proposed Conservation Area would have no effect upon the two active clay mining claims, 50 oil and gas leases (covering about 78,270 acres), 17 geothermal leases (covering about 23,684 acres), and 14 permits for the removal of sand, gravel, and cinders. Fine placer gold is periodically recovered from the Snake River, but no economical operations exist at present. Future entry, location, and patent of public land under the 1872 Mining Law would be prohibited under the proposed action. However, if mining interest is expressed in the future, locatable minerals such as clay and placer gold, which would ordinarily be disposed of under the Mining Law of 1872, may be disposed of only by lease by the Secretary.

Leasing of public lands under the Mineral Leasing Act and Geothermal Steam Act would continue in accordance with the management objectives for the proposed Conservation Area. Stipulations to this effect would be placed on each mineral lease issued for oil, gas, and geothermal development. Some development activities near nest sites during nesting periods would be curtailed, and unnecessary clearing of large areas of vegetation would be prohibited. Present rejection of mineral lease applications within the Snake River Canyon and/or immediately adjacent to essential nesting sites will continue.

In conclusion, the proposed action would not adversely affect present mineral resource leasing, mining claim activity, or sand, gravel,

and cinder extractions. Clay and placer gold would be disposed of by lease by the Secretary instead of under the 1872 Mining Law. Mineral leasing of public land would continue as long as the activities were in harmony with the management objectives for the proposed Conservation Area and did not adversely affect the birds of prey and their habitat.

IMPACT ON SOCIO-ECONOMICS

There are no industries within the proposed Conservation Area. As discussed earlier, livestock grazing is the predominant use of public land. Grazing at the present levels would be allowed to continue under the proposed action in accordance with present management objectives for the proposed Conservation Area. No farming activities are occurring on public land.

In conclusion, the proposed action would ensure the livelihood of the sixty-six livestock permittees presently using public lands and would benefit that segment of the local economy that depends upon livestock income (no dollar value has been placed on this income).

CHAPTER 4

MITIGATION MEASURES



Chapter 4

As discussed in Chapter 3, establishment of the Snake River Birds of Prey National Conservation Area will have positive impacts on wildlife, water quality, fisheries, vegetation, cultural resources, livestock grazing, recreational and visual resources, National Guard activities, and socio-economics (of the grazing permittees). The principal negative impacts are: 1) The loss of present and future farming potential pursuant to the Desert Land and Carey Acts; 2) the prohibition of future entry, location, and patent of public lands under the 1872 Mining Law; and 3) an increase in visitor use to the proposed Conservation Area, which is perhaps the most significant negative impact.

Rejection of the 196 Desert Land Act and 19 Carey Act applications will occur after the Conservation Area is established by Congress. This will mean a loss of opportunity for these applicants to acquire undeveloped public lands for farming at a relatively inexpensive cost (\$1.25 per acre under DLA) when compared to the cost of purchasing undeveloped private land (\$200 to \$300 per acre). No mitigation for this foregone opportunity exists within the proposed Conservation Area. Future potential for converting public land to farms within the proposed Conservation Area will be lost. Lands outside of the area however, are available for farm development. The BLM has recently completed a Draft Environmental Statement for Agricultural development in Southwest Idaho which delineates over 100,000 acres of land outside of the proposed Conservation Area as suitable for farm development.

Future entry, location, and patent of public lands under the 1872 Mining Law would be prohibited with the proposed action. The proposed action, however, allows for disposal of these "locatable" minerals by lease by the Secretary and mitigates impacts caused by the above prohibition.

Perhaps the most significant negative impact of the proposed action will be the previously discussed increase in "people use" of the area. This increase will adversely affect the birds of prey, cultural resources, and the present recreational resource. As noted in Chapter 3, the management plan for the proposed Conservation Area contains guidelines to mitigate potential impacts to these resources. These include:

- 1) Accelerated public education programs informing visitors of the delicate ecosystem balance in the area.
- 2) Increasing public awareness that "people presence" and activity resulting in closer contact with the birds of prey and other wildlife may cause stress, disturbance and nest abandonment, and would disrupt ecosystem balance.
- 3) Increased enforcement of present shooting, off-road vehicle, and anti-littering regulations.
- 4) Limiting camping within the Area to present and future designated camping areas;

- 5) Limiting road access to the canyon rim and within the canyon to existing roads only;
- 6) Active enforcement of federal regulations pertaining to cultural, historical, and paleontological resource protection;
- 7) Diverting activities incompatible with birds of prey management such as off-road vehicle and seasonal shooting uses to nearby designated areas outside of the proposed Conservation Area. Hunting activities during the open season would not be restricted.

CHAPTER 5

UNAVOIDABLE ADVERSE IMPACTS



Chapter 5

The mitigating measures discussed in Chapter 4 will mitigate some, but not all of the impacts identified previously. The loss of present and future farming potential within the proposed Conservation Area is an unavoidable adverse effect of the proposal. Unavoidable adverse impacts resulting from the increased presence of people will still occur to the birds of prey, cultural, and present recreational resources.

The proposed Conservation Area would be closed to farm development under the Desert Land and Carey Acts. The present 196 Desert Land Act and 19 Carey Act applications involving more than 64,000 acres of public land would be returned and no new applications would be accepted. This closure would result in a loss of present and future opportunities for farming and for acquisition of undeveloped public lands for farm development.

The increased public use of the proposed Conservation Area will bring twice as many people into closer contact with the birds of prey and other wildlife which could result in stress, disturbance, and nest abandonment. Increased destruction and vandalism could occur to cultural resources, and present recreational quality could be diminished by littering and indiscriminant camping.

Public educational awareness programs discussed previously coupled with increased enforcement of regulations governing use of firearms,

off-road vehicles, antiquities collection, littering, and limiting public use to existing roads, and designated camp areas would lessen such occurrences, but would not eliminate them totally. Isolated instances could still lead to disturbance of birds of prey, and destruction or degradation of other resources. The success of visitor use management depends directly upon the number of enforcement type people present in the Area, and how intense their coverage is.

If funding and positions are designated for 4 (2 full time and 2 part-time) enforcement personnel, the concentrated areas of public use could be patrolled, and optimum coverage of the area would be achieved year-round. Visitor-use-related damage to resources in the proposed Conservation Area would be reduced by the highest percentage. Less than optimum enforcement patrol would proportionally increase the occurrence of damage to resource values related to increased visitor use in the proposed Conservation Area.

CHAPTER 6

RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES OF MAN'S ENVIRONMENT AND MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY



CHAPTER 6

Establishment of the proposed Snake River Birds of Prey National Conservation Area would 1) ensure the long-term productivity of wildlife habitat required for the birds of prey, and 2) maintain traditional multiple-use and sustained-yield management of the public lands, except when a use or activity is determined to adversely affect the birds of prey and their habitat.

The proposal would immediately preclude present and future opportunities to obtain public lands for farm development under the Desert Land and Carey Acts. The opportunity to increase the habitat base for agriculturally oriented wildlife species is also precluded. Future entry, location, and patent of public lands under the 1872 Mining Law is prohibited, but the proposed action provides for disposal of these locatable minerals by lease by the Secretary. Although these opportunities will be precluded, others will be maintained and/or enhanced.

The loss of farming potential is a relatively short-term trade-off that will result in the protection, in perpetuity, of a total ecosystem which includes particularly unique interrelationships among geology, soils, vegetation, and wildlife. This trade-off will allow full implementation of a multiple-use/sustained-yield management plan that fully considers and emphasizes the biological, cultural, archaeological, recreational, scenic, and other resource values of the area.

The preclusion of farm development in the proposed Conservation Area will allow for the following: 1) Maintain the present water quality and flow, with related fishery production, and related water-contact recreation; 2) protect crucial foraging and nesting areas for the densest known population of birds of prey in North America, so that the present population numbers of these species is maintained for future generations; 3) control activities that might adversely affect the birds of prey, their prey, and the habitats on which all the wildlife depends; 4) promote the conservation of two endangered species, the bald eagle and the peregrine falcon; 5) maintain the existing vegetative diversity which supports the food source for the birds of prey; 6) provide additional protection and management consideration to prehistorical, historical, and paleontological resources; 7) complement protection for potential wilderness areas; 8) continue livestock grazing, thereby ensuring the livelihood of sixty-six grazing permittees; 9) continue outdoor recreational and visual opportunities associated with undeveloped lands; 10) continue Idaho National Guard activities on 122,600 acres of public land in the foreseeable future; 11) continue mineral leasing for oil, gas, and geothermal resources under stipulations designed to protect birds of prey from disturbance during seasonal nesting, and to prevent unnecessary large scale alterations of wildlife habitat.

The proposed Conservation Area will maintain and enhance all of these resource values on a long-term basis. The short-term uses of the public lands for farming and uncontrolled mineral entry will be forfeited, but the overall present and future environmental productivity of a unique ecosystem is enhanced.

CHAPTER 7

IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES



CHAPTER 7

The establishment of the proposed Conservation Area would mandate that existing environmental qualities on 515,257 acres of public land be maintained to protect and perpetuate the birds of prey and their ecosystem. No irretrievable loss of resource values would occur. The proposed action would irreversibly curtail availability of this area for farm development, and for mineral entry, location and patent under the 1872 Mining Law.

CHAPTER 8

ALTERNATIVES TO THE PROPOSED ACTION



CHAPTER 8

INTRODUCTION

This chapter focuses on three alternatives to the proposed action. The alternatives are: A) no action; B) modification of the proposed Conservation Area boundary; and C) withdrawal of the proposed Conservation Area under Section 204 of FLPMA. Alternative B modifies the boundary in the proposed action to exclude a large block (10,360 acres) of State of Idaho land. Alternative C offers another way of preserving the ecosystem, but not on a permanent basis. Table 8-1 summarizes the impacts from each alternative.

ALTERNATIVE A - NO ACTION

DESCRIPTION OF THE ALTERNATIVE

The "no action" alternative would be to manage the 515,257 acres of public land within the proposed Conservation Area as if the temporary restrictions have been lifted, i.e., under the multiple-use and sustained-yield concept as prescribed in the Federal Land Policy and Management Act of 1976. This would involve continued multiple-use management of the Natural Area, but with emphasis on protecting the nesting and wintering habitat for the birds of prey.

The "no action" alternative differs from the present management in that development that was suspended by the temporary moratorium outside

TABLE 8-1
SUMMARY OF ANTICIPATED IMPACTS

RESOURCE	TYPE OF IMPACT	PROPOSED ACTION	NO ACTION ALTERNATIVE A
WILDLIFE	ADVERSE	Increased wildlife/human interaction.	Disruption of stable ecosystem. Destruction of food source for birds of prey. Decline in population numbers of raptors.
	BENEFICIAL	Permanent protection for crucial ecosystem to maintain densest known nesting population of birds of prey in North America.	Waterfowl and upland game birds might benefit from grain crops.
VEGETATION	ADVERSE	None	Alteration of vegetation profile would destroy major element of ecosystem.
	BENEFICIAL	Maintain diversity of natural vegetation which supports food source for birds of prey.	None
CULTURAL RESOURCES	ADVERSE	Archaeological sites would continue to be disturbed.	Archaeological sites destroyed by land alteration. Other archaeological sites would continue to be disturbed.
	BENEFICIAL	Enhance protection and promote management of cultural resources.	None
WILDERNESS	ADVERSE	None	None
	BENEFICIAL	Enhance wilderness resources.	None
AGRICULTURE	ADVERSE	Rejection of 196 DLA and 19 Carey Act applications. Future opportunity for farm development forfeited.	Farm development would eliminate livestock grazing on 182,500 acres of land amounting to 19,000 AUM's.
	BENEFICIAL	Ensure continued operations of 66 livestock permittees.	Provide future opportunity for 300-400 new farmers.
RECREATION	ADVERSE	Present problems of unauthorized off-road vehicle use and litter would increase.	Recreational opportunities on 40 percent of public lands eliminate and visual resources degraded.
	BENEFICIAL	Protect present recreational and visual resources from alteration by farm development.	Hunting opportunities for waterfowl and upland game birds may increase.
NATIONAL GUARD ACTIVITIES	ADVERSE	None	None
	BENEFICIAL	Ensure continued use.	Use would continue.
MINERALS	ADVERSE	Prohibit future entry, location and patent under 1872 Mining Law.	None
	BENEFICIAL	Disposal of locatable minerals by lease by Secretary. Continuance of all other mineral activities.	None
SOCIO-ECONOMICS	ADVERSE	Opportunity for farm development forfeited.	Economic hardship for 66 livestock operators.
	BENEFICIAL	Ensure livelihood for 66 present grazing permittees.	Provide opportunity for new farmers.

TABLE 8-1

SUMMARY OF ANTICIPATED IMPACTS
(Continued)

RESOURCE	TYPE OF IMPACT	MODIFICATION OF BOUNDARY ALTERNATIVE B	WITHDRAWAL ALTERNATIVE C
WILDLIFE	ADVERSE	Increased wildlife/human interaction. Reduce productivity of all prairie falcons in Area by 6 percent in poor prey year.	Increased wildlife/human interaction. Protection of ecosystem more tenuous.
	BENEFICIAL	Permanent protection for crucial ecosystem to maintain densest known nesting population of birds of prey in North America.	Tenuous protection for crucial ecosystem to maintain densest known nesting population of birds of prey in North America.
VEGETATION	ADVERSE	None	None
	BENEFICIAL	Maintain diversity of natural vegetation which supports food source for birds of prey.	Maintain diversity of natural vegetation which supports food source for birds of prey.
CULTURAL RESOURCES	ADVERSE	Archaeological sites would continue to be disturbed.	Archaeological sites would continue to be disturbed.
	BENEFICIAL	Enhance protection and promote management of cultural resources.	Enhance protection and promote management of cultural resources.
WILDERNESS	ADVERSE	None	None
	BENEFICIAL	Enhance wilderness resources.	Enhance wilderness resources.
AGRICULTURE	ADVERSE	Rejection of 196 DLA and 19 Carey Act applications. Future opportunity for farm development forfeited.	Rejection of 196 DLA applications. Remove land from Carey Act opportunities. Future opportunity for farm development forfeited.
	BENEFICIAL	Ensure continued operation of 66 livestock permittees.	Ensure continued operation of 66 livestock permittees.
RECREATION	ADVERSE	Present problems of unauthorized off-road vehicle use and litter would increase.	Present problems of unauthorized off-road vehicle use and litter would increase.
	BENEFICIAL	Protect present recreational and visual resources from alteration by farm development.	Protect present recreational and visual resources from alteration by farm development.
NATIONAL GUARD ACTIVITIES	ADVERSE	None	None
	BENEFICIAL	Ensure continued use.	Ensure continued use.
MINERALS	ADVERSE	Prohibit future entry, location and patent under 1872 Mining Law.	Prohibit future entry, location and patent under 1872 Mining Law.
	BENEFICIAL	Disposal of locatable minerals by lease by Secretary. Continuance of all other mineral activities.	Disposal of locatable minerals by lease by Secretary. Continuance of all other mineral activities.
SOCIO-ECONOMICS	ADVERSE	Opportunity for farm development forfeited.	Opportunity for farm development forfeited.
	BENEFICIAL	Ensure livelihood for 66 present grazing permittees.	Ensure livelihood for 66 present grazing permittees.

the Natural Area would be considered. This involves processing 196 Desert Land and 20 Carey Act applications covering more than 64,000 acres, 15 oil and gas applications covering 25,700 acres, and 7 geothermal lease applications covering 12,270 acres. Military use and Bureau of Reclamation withdrawal areas would remain unchanged.

Since BLM land-use plans indicate the potential for large-scale farm development of public lands within the proposed Conservation Area, and no comprehensive development proposal exists, a possible future situation has been defined for the purposes of analyzing the impact of farm encroachment upon the birds of prey. For the purposes of analysis, it is assumed that: 1) the 26,000 acres of public land within the Natural Area would be managed to protect the birds of prey nesting habitat and winter activities; 2) the 122,600-acre military use area (public land) would continue to be used for that purpose; 3) about 142,500 acres of Bureau of Reclamation land outside the Natural Area would not be farmed; 4) 182,500 acres of undeveloped grazing land which have the potential for sprinkler irrigated farming would be developed; 5) 41,657 acres of public land not suitable for farming would be retained in their present condition; 6) energy and water would be available to support the potential farming opportunity; and 7) limited erosion controls would be implemented on the farms, and no irrigation return flows would occur.

Although this alternative has been defined for the purpose of determining the effect of large-scale farming upon the birds of prey, other resource values would be affected. These resource values have been addressed in the broadest sense to give a wider perspective. However,

it must be noted that these resources, as well as the birds of prey, would be subjected to an indepth environmental analysis by the BLM if such development would occur at some future date.

IMPACT ON WATER RESOURCES AND FISHERIES

With the anticipated conversion of 182,500 acres of land to agricultural development, the Snake River would undergo pronounced change from its present condition.

Major adverse impacts on water quality of the Snake and tributaries of the proposed Conservation Area would include slight (1-10 percent) increases in turbidity, suspended sediments, pesticides, phosphates, heavy metals, and moderate (11-25 percent) increases in conductivity and nitrates. These impacts would in turn lead to increases in noxious algal blooms which could lead to depletion of dissolved oxygen supplies essential to fish. Increases in the water quality constituents listed above would in themselves be detrimental to fish populations and other aquatic fauna of the area. These increases would result from non-point source pollution associated with farming such as accidental chemical spills, runoff from intense rainfall, and wind erosion.

Flow reductions of approximately 1,100 cfs is anticipated during the irrigation season (May to October) when flows average 8,500 cfs during an average-rainfall year and 5,300 cfs during a low-rainfall year (IWRB 1976). Such reductions would markedly reduce habitat for all fish species,

and would especially be detrimental to edge-spawners such as smallmouth bass, channel catfish, and black crappie. Fish growth would also be reduced as fish would become more concentrated in residual flows. These adverse impacts would especially be felt by white sturgeon as this species is not found in smaller flow volume rivers.

In conclusion, major adverse impacts on water quality and fisheries as the result of this alternative include a marked deterioration in water quality, large decreases in flow volume, and sharp reductions in growth and survival of fish in the proposed Conservation Area. Fisheries impacts would be more pronounced in white sturgeon, and edge-spawners such as smallmouth bass, channel catfish, and black crappie.

IMPACT ON WILDLIFE

Under the no action alternative, this ecosystem would not be afforded the permanent protection offered by the proposed action. The area would become susceptible to alteration, primarily in the form of extensive farm development. Land conversion from native range to farmland would alter the stable ecosystem presently found in this area. Specifically, conversion from existing vegetation communities to agricultural crop land would affect those wildlife species dependent upon existing habitat conditions for life requirements. The most severe impact would be the destruction of habitat for small mammals which inhabit the area, and which provide the main food source for the birds of prey.

Prey Base. Research studies found numerous populations of Townsend ground squirrels (the prairie falcons' main food) in native range. Low to nonexistent populations were recorded in irrigated farmland (Johnson et al. 1976). Soil moisture, chemicals, and continual plowing make it impossible for these burrowing animals to keep their burrows. Since they have small home ranges, many do not relocate, but simply die. Some crops such as alfalfa do not require continual cultivation and Townsend ground squirrels will occupy these areas. However, most of the crops are potatoes and sugar beets which are not suitable for ground squirrels and populations do not exist.

Numerous populations of jackrabbits were also studied. As discussed in Chapter 2, high numbers of jackrabbits, an important food source for the golden eagle, were found in sagebrush areas. Jackrabbits were not found in irrigated crop lands. Therefore, extensive elimination of sagebrush would also be detrimental to the jackrabbit populations that presently exist (Wolfe et al. 1976).

Small mammals, such as Townsend ground squirrels and jackrabbits constitute the major food source for many of the birds of prey within the proposed Conservation Area. For these birds of prey, this food source is a critical link in the ecosystem. Reduction in this prey base would lead to decreased raptor production, and would subsequently lower the number of birds of prey found within the proposed Conservation Area.

Prairie Falcons. Of all the raptor species, an increase in agricultural development in the proposed Conservation Area would most severely affect the prairie falcon population. The prairie falcons' dependence upon the Townsend ground squirrel as its primary food source has prompted BLM researchers to conclude that the high density of these squirrels found in the proposed area ensures the high density of nesting falcons. In other words, population numbers of Townsend ground squirrels and prairie falcons are directly related. As ground squirrel numbers decrease, a corresponding decrease in falcon production is also exhibited. Townsend ground squirrels comprise approximately 74 percent of the total biomass consumed by prairie falcons and the squirrel population limits the prairie falcons' nesting success. This was apparent during the 1977 drought, a poor year for both Townsend ground squirrel and prairie falcon reproduction. Since four to five percent of the total world's population of prairie falcons are found in the proposed Conservation Area, a reduction in Townsend ground squirrel numbers could have considerable significance to overall prairie falcon numbers.

Townsend ground squirrels are found in relatively high numbers throughout the proposed Conservation Area, but are most abundant in the winterfat, sagebrush and grass vegetation types (see Maps 2-4 and 2-3). These vegetation types indicate better soils and are therefore in high demand for agricultural development as shown on Map 2-6. Increased agricultural development would severely affect these squirrels by converting their natural habitat to crop land, resulting in a drastic reduction in squirrel numbers. As mentioned previously, this would have a direct negative effect on prairie falcons.

Birds of prey research studies have evaluated the impact of intensive farm development on the Townsend ground squirrel population and consequently on the prairie falcon population in the proposed Conservation Area.

Computer simulations show that if the 182,500 acres in this alternative had been farmed in 1976 (the best ground squirrel year yet observed), ground squirrel densities throughout the Study Area would have been reduced by 33 percent. Based on research results illustrating the relationship between ground squirrel density and prairie falcon reproduction, only 400 young falcons would have fledged in that year instead of 628. In 1978 (the poorest squirrel year), the same encroachment would have reduced ground squirrel density by 66 percent of the 1976 level and would have subsequently reduced the number of prairie falcons fledged to 193.

Thus, the incremental encroachment of agriculture into the winter-fat, sagebrush and grass vegetative types would result in a loss of young prairie falcons. BLM's research studies have documented that a minimum of 104 breeding adults must be replaced annually to sustain the existing population. Since young prairie falcons experience a juvenile mortality rate of 74 percent, the area must produce at least 400 young annually. Under this alternative, during poor ground squirrel years like 1977-1978, prairie falcons would be producing less than 50 percent of the number of young needed to maintain a stable population. The capability of the prairie falcon population to be self-sustaining would be jeopardized if a sequence of poor prey years occurred.

In addition to drought losses, the Townsend ground squirrel population is also potentially open to a bubonic plague epidemic (Smith et al. 1977). If this type of disaster should occur, squirrel numbers would be even further reduced.

Both these situations are very possible, and would drastically affect the prairie falcon population. As discussed in Chapter 2, the 1977 drought in Idaho had a profound effect on the ground squirrels, and in turn, on the prairie falcons. Recovery rates for both populations have been slow, and recovery to pre-1977 levels is not expected until after 1980.

Other Raptors

While prairie falcons would be intensely affected by as little as a 10 percent conversion of native range to crop land, the effects of such land conversion on other raptors varies depending upon the raptor and prey species involved. Golden eagles and red-tailed hawks would be slightly affected by the reductions in jackrabbits and ground squirrel populations. Golden eagles and red-tailed hawks prey on a larger variety of animals and would be able to shift a portion of their diet towards the different types of prey species, such as pheasants and Hungarian partridge, that would inhabit agricultural areas. Therefore, these two raptors would not be as susceptible to prey population declines as other raptor species.

While most raptor nest sites in the proposed Conservation Area are located in the Snake River canyon and are not susceptible to physical destruction, there are some ground nesting species in the winterfat, sagebrush, and grass vegetative types that would be eliminated by agricultural development. For example, the short-eared owl, marsh hawk, and burrowing owl could have their nests destroyed. In addition to actual agricultural development, the disturbance activity that is associated with farming would also adversely affect wildlife in the proposed Conservation Area. Increased human disturbance would result in added physical stress, displacement and reduced habitat quality. Factors leading to increased disturbance include: 1) increased road development, 2) greater amount of human activity, and 3) increased number of pumping sites on the Snake River.

Sensitive, Threatened, or Endangered Wildlife. The high level of disturbance associated with large scale farm development would affect the ferruginous hawk, a sensitive species in Idaho. Because their nesting habitat is not tied to the canyon area, they are in closer proximity to potential farmland. Farm development not only destroys one of their main food sources, the Townsend ground squirrel, but also causes nest abandonment in this easily disturbed species.

The two endangered species that inhabit the proposed Conservation Area are the bald eagle and the peregrine falcon. The eagle is a winter visitor that primarily utilizes habitat near the Snake River for resting, and foraging for fish. The peregrine falcon has been reintroduced into

the canyon and the success of this action has not yet been determined. Farm development and increased human activities associated with such development could disturb both of these endangered species, depending upon how close these activities are to their roosting or nesting areas.

The badger population in the proposed Conservation Area is quite large and this density is a part of the Area's uniqueness. Land conversion to farms would reduce the overall badger population and have a secondary impact upon those species that utilize badger holes as habitat. Of significance would be the burrowing owl, a sensitive species which nests in abandoned small mammal burrows.

General Considerations. Presently the birds of prey in the area contain low pesticide levels (Kochert et al. 1975; Kochert 1972). However, an increase in the use of pesticides and herbicides would accompany increased farm development and would increase the contamination levels directly or indirectly (prey base) of raptors in the area. The occurrence of certain persistent toxic chemicals in many raptorial birds has been directly linked to decreased reproductive success (Hickey 1969). Enderson and Berger (1970) showed that high organochlorine residues in prairie falcon egg contents, eggshell thinning, and pronounced hatching failures are correlated events. The cumulative effect of unregulated use of certain pesticides and herbicides could have an adverse affect on potential and/or future populations of raptors.

In contrast to the adverse impacts that would occur to existing wildlife, the no action alternative would be beneficial to those wildlife species that utilize agriculture for all or a portion of their habitat requirement. Populations of pheasants, Hungarian partridge, mourning doves, valley quail, blackbirds, starlings, house sparrows, and barn swallows would increase in the proposed Conservation Area after several years due to the conversion of rangeland to farms. As mentioned previously, this switch from existing wildlife to new, agriculturally orientated species would have both adverse and beneficial impacts on other species, especially the raptors and other predators.

Waterfowl would benefit from agricultural development through the creation of new feeding areas. Waterfowl utilize the Snake River and other bodies of water for breeding, nesting and resting. Their limiting factor is adequate foraging areas, especially corn and grain fields. With the development of agriculture in the proposed Conservation Area, waterfowl would be able to remain in the area for longer periods. Initially however, the farmed areas would be producing potatoes, sugar beets and other high monetary return crops. It would be a few years before corn and grain crops became abundant.

In conclusion, the conversion of 182,500 acres of native range to farm development would have irreversible negative impacts on the prairie falcon population in the proposed Conservation Area and possibly on the overall population of prairie falcons in North America. The unique quality of the proposed Conservation Area would be affected. Small

mammals, notably Townsend ground squirrels and jackrabbits would be eliminated from farmed lands, thereby reducing the availability of these species for food for birds of prey. Ground nesting raptors would have their nests destroyed. Disturbance activity associated with farm development would affect all wildlife, but would have the greatest disturbance effect on the ferruginous hawk, a sensitive species. The bald eagle and peregrine falcon could also be adversely affected by farm activity.

An increase in the use of pesticides in the area would increase contamination levels in the food sources for birds of prey, and ultimately affect reproduction success.

The productive ecosystem of the proposed Conservation Area would be irretrievably altered. As their food source declines, the birds of prey would produce fewer young or, in time, may not return to the area at all.

IMPACT ON VEGETATION

The most significant impact to vegetation would occur when 182,500 acres of native rangeland is cleared and leveled in preparation for irrigated farm development. The native vegetation on large tracts of public land would be destroyed. While it is not known how much of each vegetative type would be destroyed, the following vegetation types would be affected since they indicate farmable soils: Big sagebrush, big sagebrush-winterfat, shadscale, and shadscale-winterfat (see Table 2-3 for percent of occurrence in the Study Area). The unusually large stand of white sagebrush (winterfat) found in the area would also be reduced.

In addition, there would be some destruction of vegetation by construction activities during installation and maintenance of roads, irrigation systems, etc., associated with farming.

In conclusion, farm development would alter the vegetation profile of the proposed Conservation Area, and thereby destroy a major element of the total ecosystem.

IMPACT ON CULTURAL RESOURCES

At least 25 percent of the archaeological sites in the proposed Conservation Area are presently being eroded by natural causes. A number of these are being more extensively damaged by vehicle traffic and vandalism.

In the year 2000 the cultural resource data base in the proposed Conservation Area will have been reduced by such factors as vandalism and erosion. It is certain visitor use will continue its rising trend bringing with it a proportionate increase in vandalism to cultural sites, and increased erosion due to 2 and 4-wheeled vehicle traffic.

The large scale conversion of 182,500 acres of public land to agricultural development would have numerous and severe impacts on all cultural and historical resources in the area. Intensive farm development would foster the construction of large dams, whose reservoirs would

inundate a number of known cultural sites. These activities would involve an irreversible and irretrievable commitment of a portion of the cultural resource data base since even the salvage of a site represents a loss of these non-renewable resources.

Four historic sites presently on the National Register of Historic Places (Guffey Railroad Bridge and townsite, a mining settlement near Halverson Bar, and the Swan Falls Dam) could all be adversely affected by activities associated with farm development, such as irrigation reservoirs, new dams, and pipelines. Remnants of the Oregon Historic Trail could be destroyed by farm development, and the visual integrity associated with the trail would be degraded by farm development close to it.

In conclusion, failure to designate the area as the Snake River Birds of Prey National Conservation Area will have the net effect of making a large portion of the land available for other uses, particularly agricultural development. These other uses are all expected to irretrievably affect cultural and historical resources.

IMPACT ON WILDERNESS

The location and extent of wilderness resources within the proposed Conservation Area is not known at present. Pending the formal inventory and evaluation of wilderness resources within the area, all public lands will be managed so as not to impair their suitability for preservation as wilderness (see Wilderness discussion in Chapter 2).

IMPACT ON AGRICULTURE

Grazing. Sixty-six grazing permittees depend upon the public lands as an integral part of their year round livestock business. Their present permits involve 65,000 AUMs on public land.

If the maximum of 182,500 acres of public land are converted to farm development, 40 percent of the present rangeland would be eliminated. This would result in a loss of about 19,000 AUMs, involving a large portion of the winter range. This winter range is a key part in an "economic" livestock operation. Without the winter range operators would have to feed their cattle, which is prohibitively expensive, or sell them, regardless of market prices. This loss of AUMs and especially loss of winter range would adversely affect the livelihood of the current livestock operators.

Farming. If the maximum of 182,500 acres of public land with potential for farm development is converted to private farm development under the Carey or Desert Land Act, it would provide a future opportunity for 300 to 400 new farmers depending upon the method of land transfer.

In conclusion, farm development would be beneficial to potential farmers and highly detrimental to current livestock operators and their grazing operations.

IMPACT ON RECREATION

Under this alternative, up to 40 percent of the public land within the proposed Conservation Area could be lost to public recreational use through conversion to privately owned farms. Off-road vehicle use and sightseeing would be the activities primarily adversely affected by farm development. Hunting opportunities would be expected to increase in the future with the development of agriculture, since upland gamebirds and waterfowl would be attracted to crops of corn, grains, and alfalfa.

Loss of lands to public use would cause a concentration of recreational activities on remaining undeveloped public lands, such as those within the existing Natural Area. This concentrated use could result in conflicts between recreation and other resources as well as between recreational activities. Recreational opportunities along the Snake River would be further degraded by the construction of irrigation pump sites on undeveloped recreation sites, and by the lowering of water quality and quantity due to irrigation withdrawals.

Scenic and visual resources throughout the proposed Conservation Area would be adversely affected by the conversion of undeveloped land into farms, and by the construction of farm-related roads, transmission lines, buildings, pump stations, pipelines, canals, etc. The most serious visual impacts would be caused by the development of additional pump stations with penstocks within the Snake River Canyon.

In conclusion, the conversion of 40 percent of the public lands to farm development would irreversibly affect the recreational and visual resource values of the proposed Conservation Area. Quality and quantity of recreational and visual opportunities would be degraded.

IMPACT ON NATIONAL GUARD ACTIVITIES

For the reason given in Chapter 3, the effect of implementing this alternative would be no different from that of the proposed action.

IMPACT ON MINERALS

Regardless of the method of land transfer, the mineral values of any public land for leasable minerals (oil, gas, and geothermal) or locatable minerals (clay and placer gold) would be evaluated, and the mineral rights reserved to the Federal Government. Therefore, leasing, as such, would not be affected by farm development, unless the private farmland developer will not allow occupancy on his property. This use is negotiated by the mineral lessee and the private land owner. Public lands would be open to entry, location and patent under the 1872 Mining Law.

In conclusion, the conversion of 182,500 acres of public land would have no adverse effect on leasable or locatable mineral opportunities, except where private surface owners will not allow occupancy on their lands, which may prohibit mineral development.

Implementation of this alternative would result in economic hardship for 66 livestock operations, while at the same time create economic opportunities for 300 to 400 farmers. The economic losses or opportunities cannot be quantified in dollar figures with present information. However, a comparable situation involving over 100,000 acres was analyzed by BLM in a recently published impact statement regarding irrigated farm development in southwest Idaho. However, it is felt by the livestock permittees that without their winter grazing ranges, most of the livestock operators would go out of business. The economic opportunities for 300 to 400 potential farmers would increase. Initially, crops of potatoes and sugar beets would be planted. Market values for these crops are currently depressed, therefore economic value of this opportunity would depend greatly on market values at harvest time.

Most new land analyzed for development adjacent to and within the proposed Conservation Area would have to be irrigated by pumping water hundreds of feet up from the Snake River. This entails large capital investments and enormous quantities of electrical energy. These costs have raised serious questions about the economic feasibility of bringing new land into production.

While it is very difficult to quantify these costs, the best estimate available to date suggests irrigating roughly 100,000 acres of public land would annually require generating approximately 500 million kilowatt-hours of electricity.

If the private utility serving southwestern Idaho constructed a new generating plant to meet this new demand the cost of the energy produced in 1977 dollars would be approximately \$60 million per year. Under the current rate system, this cost would be apportioned among all the utility's customers. Irrigators bringing the new land into production and creating the demand for the new supply of electricity would pay approximately \$8 million, or about 13 percent of the total annual cost; \$47 million or 78 percent would be paid by all other ratepayers; the remainder would be paid by off-irrigation season sales to other utilities.

These costs would translate into a public energy subsidy of \$420 per acre per year, or a \$90 per year increase in the average Idaho residential ratepayer's electricity bill.

If the utility were able to enter into a joint venture with another company to obtain the required electricity only when needed during the irrigation season, the energy subsidy could be reduced to approximately \$140 per acre or a total of about \$14 million annually.

Even though the bulk of the energy costs required to bring the new lands proposed for irrigation would be borne by the general public in Idaho, the remaining costs borne by the new irrigators would have a depressing effect on their net farm incomes.

The two energy production options discussed above would for example, result in roughly \$20,000 - \$24,000 annual energy costs for a typical new 320 acre farm adjacent to the birds of prey Conservation Area.

Based upon 1972-1976 weighted average crop prices, and a typical farm operating budget, energy costs of these magnitudes would result in approximate annual net incomes of \$1,500 - \$5,400. The U.S. Department of Labor estimates the 1978 poverty level income for a farm family of four members to be \$5,270.

At 1977 farm level prices the typical new 320 acre farm unit would suffer an estimated net loss of \$29,000 - \$33,000 per year.

In addition to substantial increases in their own power bills, existing irrigators in southern Idaho would be affected at the marketplace by the conversion of additional public lands to irrigated agriculture. For example, it has been estimated that within five years the 100,000 acres of public land proposed for development adjacent to the Conservation Area would produce, among other crops, approximately 750 million pounds of potatoes. All other factors remaining equal, this new production could reduce farm level potato prices nationwide by more than one third. At 1978 prices, many Idaho farmers sold their potatoes for less than the cost of production, or simply gave them away.

There are other direct costs associated with converting additional public lands in southern Idaho to private irrigated agriculture. Like

the land within the proposed Conservation Area, the adjacent 100,000 acres proposed for irrigation development is grazed by domestic livestock as an integral part of private ranching operations. Grazing would be directly eliminated on a little more than 100,000 acres and hindered and or jeopardized on a far greater area. These reductions would make it economically impossible for many livestock operators to stay in business.

In conclusion, conversion of public rangeland to farmland would 1) eliminate 66 continued economic livestock operations on public land, and 2) provide opportunity for new farmers, depending on market values for crops.

ALTERNATIVE B - MODIFICATION OF THE PROPOSED CONSERVATION AREA BOUNDARY

DESCRIPTION OF THE ALTERNATIVE

This alternative to the proposed action modifies the boundary of the proposed Snake River Birds of Prey National Conservation Area to exclude a 10,360-acre block of State-owned land west of Mountain Home (Map 8-1). As described in Chapter 1, BLM's jurisdiction does not apply to State or privately owned lands, only to public lands. The impacts of this alternative on resource values will not differ from those discussed under the proposed action (Chapter 3), except for 1) loss of opportunity for BLM to acquire these lands as a part of the proposed Conservation Area by land exchange, and 2) loss of national recognition of these lands as being a part of the total birds of prey ecosystem.

SUMMARY OF IMPACTS

This block of land was analyzed by BLM's computer graphics system for vegetation characteristics, and raptor prey species composition and density. The area presently is comprised of 71 percent dense sage and sage/brome vegetation cover types, and 26 percent forb/grassland. The vegetation on this block of State land provides important habitat for raptor prey species.

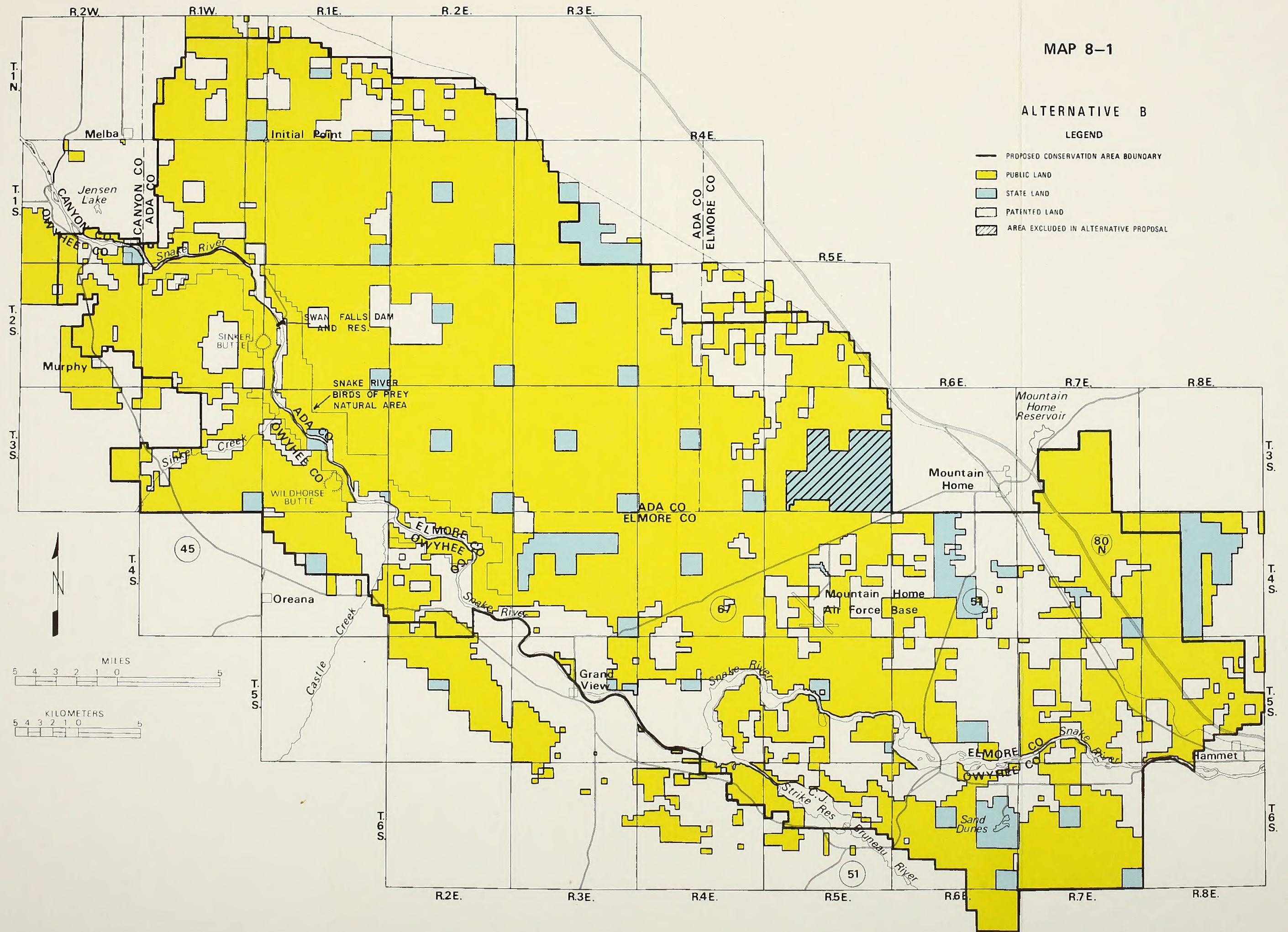
Ground squirrel density in this block of land is block of land is 1.5 times the average density of Townsend ground squirrels and black-tailed jackrabbits in the entire Study Area. Thus, the area can be

MAP 8-1

ALTERNATIVE B

LEGEND

- PROPOSED CONSERVATION AREA BOUNDARY
- PUBLIC LAND
- STATE LAND
- PATENTED LAND
- ▨ AREA EXCLUDED IN ALTERNATIVE PROPOSAL



considered a significant foraging area for raptors, especially prairie falcons and golden eagles.

Using known prairie falcon nest sites over the years 1974-78 and generalized hunting ranges based on radio telemetry results, 41 traditional prairie falcon pairs which nest along the Snake River have ranges extending into this area, and a maximum of 31 pairs have utilized the area in any one year. The generalized hunting ranges of these 31 falcon pairs encompass an area of 171 square miles, including the Mountain Home Air Force Base, the 10,360 acres of State lands, and about 17 square miles of existing farmland. Therefore, 140 square miles of native range is presently utilized by these 31 pairs of raptors for hunting.

In the Crater Rings, less than two miles from the State land, 3 additional pairs of prairie falcons, one pair of golden eagles, and one pair of ferruginous hawks nest. While none of these pairs has been radio tracked, these birds nest well within foraging distance of the block of State lands.

State law requires that State lands be managed for the highest monetary returns to the State school system. Therefore, it is highly probable that these 10,360 acres of State land would undergo alteration to maximize the State's monetary returns, either through farm lease, or range improvement in the form of crested wheatgrass seedings. As mentioned previously, these lands are included in a 140 square mile hunting area for 31 pairs of prairie falcons.

If we assume that 50 percent of these 140 square miles of native range have potential for either farming or seeding (the average for the north side of the Study Area is 40 percent), then agricultural conversion of the 17 square mile block of State land would represent a 24 percent encroachment of the farmable habitats. Based on the observed relationship of ground squirrel numbers and prairie falcon reproduction, 24 percent encroachment could reduce total prairie falcon reproduction by 40 percent in a poor prey situation.

In this case, a 40 percent reduction in productivity of these 31 pairs could result in a 6 percent reduction in total prairie falcon productivity in the Study Area. This would mean a loss of 30 fledged birds during a poor prey year like 1977, and 38 young birds during a good prey year such as 1976. While impacts of converting the land to crested wheatgrass would not be as severe as conversion to farmland, the reduction of prey species will still have a significant adverse impact on these 31 pairs of prairie falcons.

The impacts of this alternative on resource values other than wildlife will not differ from those discussed under the proposed action (Chapter 3). While BLM has no jurisdiction over State-owned lands, BLM and the State of Idaho have worked closely on managing lands important to all wildlife species, especially the birds of prey.

In conclusion, the opportunity for BLM to acquire these lands as a part of the proposed Conservation Area by land exchange could be forfeited. The loss of national recognition of these lands as being a

part of the total birds of prey ecosystem may increase the probability of their alteration. Such alteration could reduce the productivity of 31 pairs of prairie falcons by 40 percent which consequently reduces the overall prairie falcon production of fledged birds by 6 percent in a poor prey year.

ALTERNATIVE C - WITHDRAWAL OF THE BIRDS OF PREY NATIONAL CONSERVATION AREA UNDER FLPMA

DESCRIPTION OF THE ALTERNATIVE

Alternative C to the proposed action is to protect and maintain the public lands delineated by the proposed Birds of Prey National Conservation Area through administrative withdrawal by the Secretary of the Interior under the authority of Section 204 of the Federal Land Policy and Management Act (FLPMA). This withdrawn area would encompass the same area as that of the proposal (See Map 1-1). Within this withdrawn area, the public lands would be administered by the Bureau of Land Management (BLM). Although lands owned by the State of Idaho and private individuals would be included in the withdrawn area use of these lands would not be affected under this alternative.

The Secretary of the Interior may withdraw these 515,257 acres of public land for not more than 20 years subject to Congressional review. Since withdrawals are subject to administrative review during the life of the withdrawal, and must be reviewed at the end of the withdrawal period, they may be extended or revoked at any time.

This alternative proposes that the effect of the withdrawal would be to remove these public lands from appropriation under the non-discretionary public land laws including the Carey Act, and the State of

Idaho Admissions Act, and from mineral entry, location, and patent under the 1872 Mining Law. However, minerals subject to disposal under the 1872 Mining Law may be disposed of by lease by the Secretary under regulations to be developed. The Bureau of Reclamation withdrawals would be revoked, and these lands would be withdrawn under the proposed Conservation Area withdrawal. The present 196 applications for public land under the Desert Land Act would be rejected, and the proposed Conservation Area withdrawal would be closed to application for future farm development under the Desert Land Act.

Under this withdrawal, the Secretary of the Interior through the BLM would manage the proposed Conservation Area withdrawal as provided in a land use plan developed under the authority of Section 202 of FLPMA. The existing land use and management plan would be updated as necessary. Basically, the proposed Conservation Area withdrawal would be managed so that the birds of prey and their nesting and foraging areas would receive primary consideration. Other land uses would be allowed so long as they do not jeopardize these birds of prey or their habitat.

SUMMARY OF IMPACTS

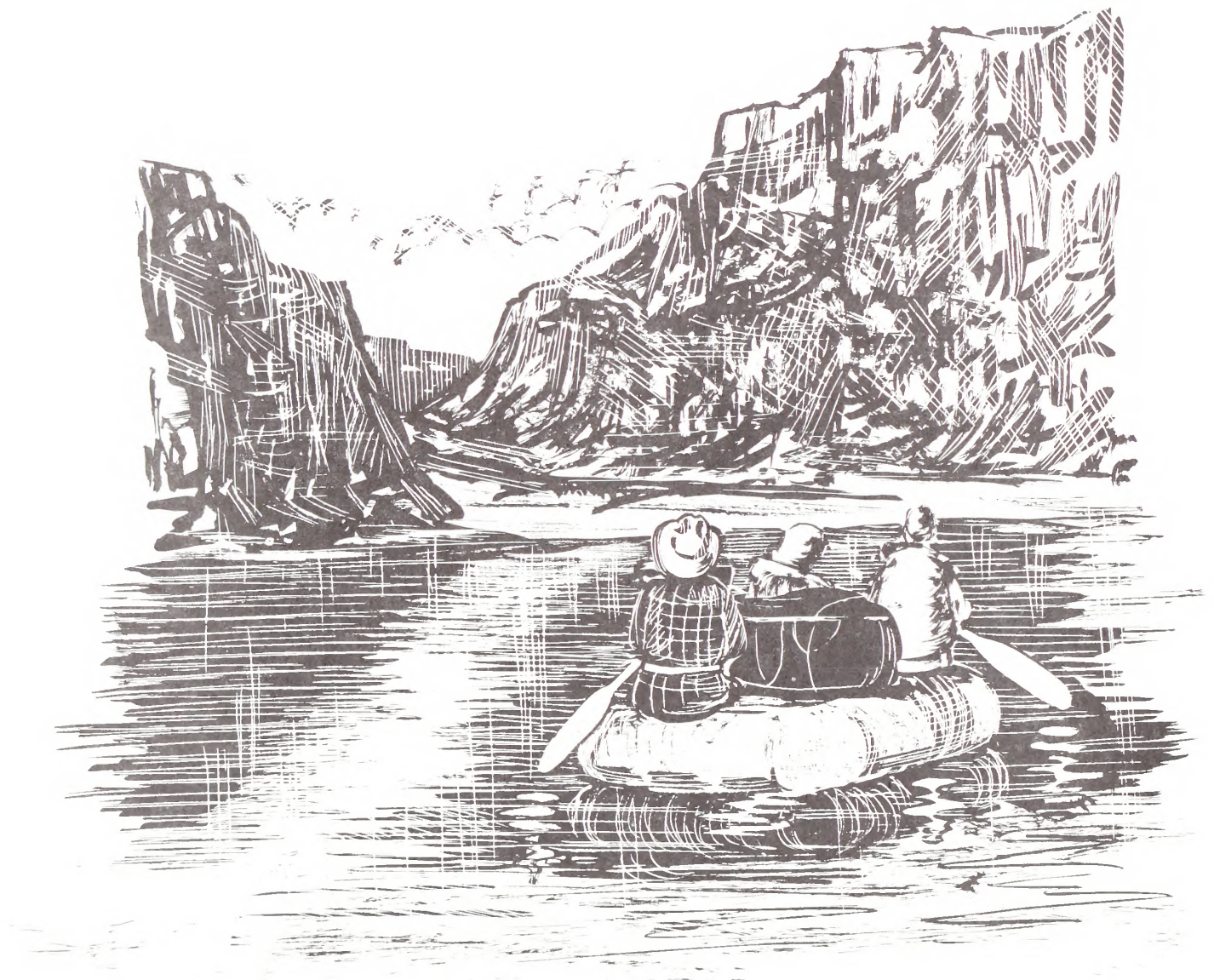
The impacts of alternative C would be the same on all resources as the impacts identified under the proposed action with one major difference. While the proposed action (legislative designation) protects the resource values and the entire ecosystem in perpetuity, this withdrawal alternative

does not. The protection and maintenance of all resource values in the proposed Conservation Area withdrawal, and the future existence of the ecosystem upon which many of these resources depend, would be more tenuous than under legislative designation of the land.

Revocation of the proposed withdrawal at any time would allow irreversible and irretrievable alterations to occur to these resources, as discussed in alternative A - no action. Most importantly, such alterations would destroy the Conservation Area's complex and stable ecosystem, and forfeit the unique birds of prey resource.

CHAPTER 9

CONSULTATION AND COORDINATION



CHAPTER 9

INTRODUCTION

This chapter includes a brief history of the consultation and coordination undertaken prior to and during preparation of this statement. Information about the organization of the ES team, federal, state and local agency contacts is also included.

ORGANIZATION OF TEAM FOR PREPARATION OF THE DRAFT ES

On September 21, 1978, the team assembled in Boise, Idaho, to begin preparing this ES. The team consisted of a staff from the Bureau of Land Management (BLM) Boise District Office. Team members include a broad spectrum of specialists: range conservationist, fisheries biologist, wildlife biologist, Birds of Prey Research Team, archaeologist, recreation planner, geologist, realty specialist and sociologist. The District Manager, team leader, editor, engineering technician, typists and draftsmen provided support, guidance and coordination for the effort.

CONSULTATION AND COORDINATION PRIOR TO PREPARATION OF THE ES

Since the establishment of the Snake River Birds of Prey Natural Area in 1971, many contacts have been made to keep the public informed of new developments in research findings and management programs.

Starting in 1974, approximately 750 annual research reports have been distributed each year to universities, government agencies, private industry and interested individuals. One hundred copies of each quarterly report are also sent out each year.

In the spring of 1974, an intensive effort was initiated by the BLM Boise District to give educational and informational talks on the Birds of Prey Area. Boise and the many surrounding communities have been visited. Primary contacts have been schools, colleges, service clubs, conservation organizations and church groups. Many tours have also been conducted to the area, mostly involving conservation organizations from locations within and outside of Idaho.

The local public has had additional opportunity to be involved with the Birds of Prey Area through the Bureau Planning System, specifically the Kuna Management Framework Plan and the West Owyhee Management Framework Plan (See Chapter I, Interrelationship with Bureau Planning System).

The public at large has been kept informed by information dispersed through articles in various publications and films such as:

Our Public Lands Magazine

Audubon Magazine

Sunset Magazine

National Wildlife Magazine

Pacific Search Magazine

Defenders Magazine

Ranger Rick Magazine

Wild Kingdom (2 T.V. programs)

Time Life Wild Wild World of Animals (T.V.)

The Nature Conservancy (film)

Audubon Film Lecture Series

Numerous local, state and national newspapers

CONSULTATION AND COORDINATION IN PREPARATION OF THE DRAFT ES

During the preparation of the draft environmental statement (DES), the team was in contact with other federal offices, state and local agencies, interest groups and individuals. Communication varied from formal written comment to informal personal contact. The Idaho Governor's Office and the State Clearinghouse have been kept up to date on any new developments regarding the Birds of Prey Area.

On November 9, 1978, the Boise District Office sent out a news release describing BLM's plans to prepare an ES on the Snake River Birds of Prey Conservation Area proposal. This news release was sent to 137 newspapers, 58 radio stations, 18 television stations and 2 news services.

Five general groups of people were interviewed to obtain the social attitudes for this statement. They were the general public, ranchers and farmers, local urban residents, local rural residents and groups with special environmental or conservation interests and concerns.

The U.S Fish and Wildlife Service was informally contacted during the preparation of the DES. By letter of November 17, 1978, the FWS was formally contacted for consultation relative to requirements of Section 7 of the Endangered Species Act. This consultation process was completed on January 23, 1979. The Fish and Wildlife Service concluded that the proposed Birds of Prey Conservation Area would promote the conservation of the bald eagle and the peregrine falcon, and the Idaho Department of Fish and Game provided additional information on the status of the Snake River fishery, sensitive species and wildlife. Informal contact has been maintained throughout the environmental statement process.

The State Historic Preservation Office (SHPO) was contacted in regard to Section 106 of the National Historic Preservation Act of 1966. The SHPO's recommendations have been incorporated into the text. The Bureau of Reclamation, Soil Conservation, Idaho Department of Lands, Idaho Department of Water Resources, Idaho National Guard, the Nature Conservancy and the Idaho Power Company were also contacted informally during the preparation of this statement.

A request was made to the U.S. Geological Survey on January 9, 1979 for a Mineral Report on the Study Area. A report was received on March 13, 1979, and the information has been incorporated into this text.

Copies of this draft environmental statement are available for public inspection at the BLM offices listed below:

WASHINGTON OFFICE OF PUBLIC AFFAIRS
18th and C Streets
Washington, DC 20240
Phone: (202) 343-5715

IDAHO STATE PUBLIC AFFAIRS OFFICE
Federal Building
550 W. Fort Street
Boise, ID 83702
Phone: (208) 384-1770

BOISE DISTRICT OFFICE
230 Collins Road
Boise, ID 83702
Phone: (208) 384-1582

APPENDIX A

CLASS OR ANIMAL	COMMON NAME	SCIENTIFIC NAME	SEASON OF USE	OCCURENCE	CLASSIFICATION
Mammals	Merriam Shrew	Sorex merriami	Yearlong	Common	
	Little Brown Bat	Myotis lucifugus	Migrations-Summer	Common	
	Fringed Bat	Myotis thysanodes	Migrations-Summer	Occasional	
	Long-eared Bat	Myotis evotis	Migrations-Summer	Rare	
	California Bat	Myotis californicus	Migrations-Summer	Occasional	
	Yuma Bat	Myotis yumanensis	Migrations-Summer	Occasional	
	Long-legged Bat	Myotis volans	Migrations-Summer	Occasional	
	Western Bat	Pipistrellus hesperus	Migrations-Summer	Common	
	Spotted Bat	Euderma maculata	Migrations-Summer	Rare	Sensitive
	Western Big-eared Bat	Plecotus townsendii	Migrations-Summer	Occasional	
	Pallid Bat	Antrozous pallidus	Migrations-Summer	Rare	
	Raccoon	Procyon lotor	Yearlong	Common	
	Longtail Weasel	Mustela frenata	Yearlong	Common	
	Mink	Mustela vison	Yearlong	Rare	Fur Bearing Sensitive
	River Otter	Lutra canadensis	Yearlong	Rare	Fur Bearing
	Badger	Taxidea taxus	Yearlong	Common	
	Spotted Skunk	Spilogale putorius	Yearlong	Common	
	Striped Skunk	Mephitis mephitis	Yearlong	Common	
	Coyote	Canis latrans	Yearlong	Common	
	Red Fox	Vulpes fulva	Yearlong	Rare	Fur Bearing
	Bobcat	Lynx rufus	Yearlong	Occasional	Sensitive Fur Bearing

CLASS OR ANIMAL	COMMON NAME	SCIENTIFIC NAME	SEASON OF USE	OCCURENCE	CLASSIFICATION
Mammal	Yellowbelly Marmot	Marmota flaviventris	Yearlong	Common	
	Townsend Ground Squirrel	Spermophilus townsendi	Yearlong	Common	
	Belding Ground Squirrel	Spermophilus beldingi	Yearlong	Rare	
	White-tail Antelope Squirrel	Ammospermophilus leucurus	Yearlong	Common	
	Least Chipmunk	Eutamias minimus	Yearlong	Common	
	Northern Pocket Gopher	Thomomys talpoides	Yearlong	Common	
	Townsend Pocket Gopher	Thomomys townsendi	Yearlong	Common	
	Great Basin Pocket Mouse	Perognathus parvus	Yearlong	Occasional	
	Ord Kangaroo Rat	Dipodomys ordi	Yearlong	Common	
	Beaver	Castor canadensis	Yearlong	Common	Fur Bearing
	Western Harvest Mouse	Reithrodontomys megalotis	Yearlong	Common	
	Deer Mouse	Peromyscus maniculatus	Yearlong	Common	
	Northern Grasshopper Mouse	Onychomys leucogaster	Yearlong	Common	
	Longtail Vole	Microtus longicaudus	Yearlong	Common	
	Meadow Vole	Microtus pennsylvanicus	Yearlong	Common	
	Sagebrush Vole	Lagurus curtatus	Yearlong	Common	
	Muskrat	Ondatra zibethica	Yearlong	Common	Fur Bearing
	Bushy-tailed Wood Rat	Neotoma cinerea	Yearlong	Common	
	House Mouse	Mus musculus	Yearlong	Rare	
	Western Jumping Mouse	Zapus princeps	Yearlong	Occasional	
	Black-tailed Jackrabbit	Lepus californicus	Yearlong	Common	

CLASS OR ANIMAL	COMMON NAME	SCIENTIFIC NAME	SEASON OF USE	OCCURENCE	CLASSIFICATION
Mammal	Mountain Cottontail	Sylvilagus nuttalli	Yearlong	Common	Game Animal
	Pygmy Rabbit	Sylvilagus idahoensis	Yearlong	Occasional	Game Animal
	Mule Deer	Odocoileus hemionus	Yearlong	Occasional	Game Animal
Birds	Common Loon	Gavia immer	Migrations	Common	
	Horned Grebe	Podiceps auritus	Migrations	Common	
	Eared Grebe	Podiceps caspicus	Yearlong	Common	
	Western Grebe	Aechmophorus occidentalis	Migrations-Summer	Common	
	Pied-billed Grebe	Podilymbus podiceps	Yearlong	Common	
	White Pelican	Pelecanus erythrorhynchos	Summer	Rare	
	Double-crested Cormorant	Phalacrocorax auritus	Migrations	Common	
	Great Blue Heron	Ardea herodias	Yearlong	Common	
	Common Egret	Casmerodius albus	Migrations-Summer	Rare	
	Snowy Egret	Leucophoxyx thula	Migrations-Summer	Occasional	
	Black-crowned Night Heron	Nycticorax nycticorax	Migrations-Summer	Common	
	American Bittern	Botaurus lentiginosus	Migrations-Summer	Rare	
	Whistling Swan	Olor columbianus	Migrations-Winter	Common	
	Canada Goose	Branta canadensis	Yearlong	Common	Migratory Game Bird
	Snow-blue Goose	Chen caerulescens	Migrations-Winter	Occasional	Migratory Game Bird
	Mallard	Anas platyrhynchos	Yearlong	Common	Migratory Game Bird
	Gadwall	Anas strepera	Yearlong	Common	Migratory Game Bird
	Pintail	Anas acuta	Yearlong	Common	Migratory Game Bird

CLASS OR ANIMAL	COMMON NAME	SCIENTIFIC NAME	SEASON OF USE	OCCURENCE	CLASSIFICATION
Birds	Green-winged Teal	Anas carolinensis	Yearlong	Common	Migratory Game Bird
	Blue-winged Teal	Anas discors	Migrations-Summer	Occasional	Migratory Game Bird
	Cinnamon Teal	Anas cyanoptera	Migrations-Summer	Common	Migratory Game Bird
	American Wigeon	Anas americana	Yearlong	Common	Migratory Game Bird
	Shoveler	Anas clypeata	Yearlong	Occasional	Migratory Game Bird
	Wood Duck	Aix sponsa	Migrations	Rare	Migratory Game Bird
	Red Head	Aythya americana	Yearlong	Occasional	Migratory Game Bird
	Ring-necked Duck	Aythya collaris	Migrations-Winter	Rare	Migratory Game Bird
	Canvasback	Aythya valisineria	Migrations-Winter	Occasional	Migratory Game Bird
	Great Scaup	Aythya marila	Migrations	Rare	Migratory Game Bird
	Lesser Scaup	Aythya affinis	Migrations-Winter	Occasional	Migratory Game Bird
	Common Goldeneye	Bucephala clangula	Migrations-Winter	Common	Migratory Game Bird
	Barrows Goldeneye	Bucephala islandica	Migrations-Winter	Rare	Migratory Game Bird
	Bufflehead	Bucephala albeola	Migrations-Winter	Common	Migratory Game Bird
	Ruddy Duck	Oxyura jamaicensis	Migrations-Summer	Occasional	Migratory Game Bird
	Common Merganser	Mergus merganser	Migrations-Winter	Common	Migratory Game Bird
	Red-breasted Merganser	Mergus serrator	Migrations-Winter	Occasional	Migratory Game Bird
	Turkey Vulture	Cathartes aura	Migrations-Summer	Occasional	
	Goshawk	Accipiter gentilis	Winter	Rare	
	Cooper's Hawk	Accipiter cooperi	Migrations-Winter	Occasional	
	Sharp-shinned Hawk	Accipiter striatus	Migrations-Summer	Occasional	

CLASS OR ANIMAL	COMMON NAME	SCIENTIFIC NAME	SEASON OF USE	OCCURENCE	CLASSIFICATION
Birds	Red-tailed Hawk	Buteo jamaicanis	Yearlong	Common	
	Swainson's Hawk	Buteo swainsoni	Migrations-Summer	Occasional	
	Rough-legged Hawk	Buteo lagopus	Migrations-Winter	Common	
	Ferruginous Hawk	Buteo regalis	Yearlong	Occasional	Sensitive
	Golden Eagle	Aquila chrysaetos	Yearlong	Common	
	Bald Eagle	Haliaeetus leucocephalus	Migrations-Winter	Occasional	Endangered
	Marsh Hawk	Circus cyaneus	Yearlong	Common	
	Osprey	Pandion haliaetus	Migrations	Occasional	Sensitive
	Prairie Falcon	Falco mexicanus	Yearlong	Common	
	Peregrine Falcon	Falco peregrinus	Yearlong	Rare	Endangered
	Merlin	Falco columbarius	Migrations-Winter	Occasional	Sensitive
	Kestrel	Falco sparverius	Yearlong	Common	
	Sage Grouse	Centrocercus urophasianus	Yearlong	Rare	Game Bird
	California Quail	Lophortyx californicus	Yearlong	Common	Game Bird
	Chukar	Alectoris graeca	Yearlong	Common	Game Bird
	Hungarian Partridge	Perdix perdix	Yearlong	Common	Game Bird
	Ring-necked Pheasant	Phasianus colchicus	Yearlong	Common	Game Bird
	Virginia Rail	Rallus limicola	Migrations-Summer	Occasional	
	Sora	Porzana carolina	Migrations	Rare	
	Willet	Catoptrophorus semipalmatus	Migrations	Rare	
	American Coot	Fulica americana	Yearlong	Common	Migratory Game Bird

CLASS OR ANIMAL	COMMON NAME	SCIENTIFIC NAME	SEASON OF USE	OCCURENCE	CLASSIFICATION
Birds	Semipalmated Plover	Charadrius alexandrinus	Migrations	Occasional	
	Killdeer	Charadrius vociferus	Yearlong	Common	
	Black-bellied Plover	Squatarola squatarola	Migrations	Rare	
	Common Snipe	Capella gallinago	Migrations-Summer	Common	Migratory Game Bird
	Long-billed Curlew	Numenius americanus	Migrations-Summer	Occasional	Sensitive
	Spotted Sandpiper	Actitis macularia	Migrations-Summer	Common	
	Greater Yellowlegs	Totanus melanoleucus	Migrations	Common	
	Lesser Yellowlegs	Totanus flavipes	Migrations	Common	
	Least Sandpiper	Erolia minutilla	Migrations	Rare	
	Dunlin	Erolia alpina	Migrations	Rare	
	Short-billed Dowitcher	Limnodromus griseus	Migrations	Rare	
	Long-billed Dowitcher	Limnodromus scolopaceus	Migrations	Common	
	Semipalmated Sandpiper	Ereunetes pusillus	Migrations	Occasional	
	Western Sandpiper	Ereunetes mauri	Migrations	Common	
	Marbled Godwit	Limosa fedoa	Migrations	Rare	
	American Avocet	Recurvirostra americana	Migrations-Summer	Common	
	Wilson's Phalarope	Stegonopus tricolor	Migrations-summer	Common	
	Northern Phalarope	Lobipes lobatus	Migrations	Occasional	
	Herring Gull	Larus argentatus	Migrations	Rare	
	California Gull	Larus californicus	Migrations-Summer	Common	
	Ring-billed Gull	Larus delawarensis	Yearlong	Common	

CLASS OR ANIMAL	COMMON NAME	SCIENTIFIC NAME	SEASON OF USE	OCCURENCE	CLASSIFICATION
Birds	Bonaparte's Gull	Larus philadelphia	Migrations	Common	
	Black Tern	Chlidonias niger	Summer	Occasional	
	Foster's Tern	Sterna forsteri	Migrations	Rare	
	Caspian Tern	Hydroprogne caspia	Summer	Common	
	Rock Dove	Columba livia	Yearlong	Common	
	Mourning Dove	Zenaidura macroura	Migrations-Summer	Common	Migratory Game Bird
	Yellow-Billed Cuckoo	Coccyzus americanus	Migrations-Summer	Rare	
	Barn Owl	Tyto alba	Yearlong	Common	
	Great Horned Owl	Bubo virginianus	Yearlong	Common	
	Burrowing Owl	Speotyto cunicularia	Migrations-Summer	Common	Sensitive
	Screech Owl	Asio otus	Yearlong	Occasional	
	Long-eared Owl	Asio otus	Yearlong	Occasional	
	Short-eared Owl	Asio flammeus	Yearlong	Common	
	Poor-will	Phalaenoptilus nuttallii	Migrations-Summer	Occasional	
	Common Nighthawk	Chordeiles minor	Migrations-Summer	Common	
	Black-chinned Hummingbird	Archilochus alexandri	Migrations-Summer	Occasional	
	Belted Kingfisher	Megasceryle alcyon	Yearlong	Common	
	Bohemian Waxwing	Bombicilla garrula	Winter	Rare	
	Cedar Waxwing	Bombicilla cedrorum	Migrations-Winter	Occasional	
	Northern Shrike	Lanius excubitor	Winter	Rare	
	Loggerhead Shrike	Lanius ludovicianus	Migrations-Summer	Common	

CLASS OR ANIMAL	COMMON NAME	SCIENTIFIC NAME	SEASON OF USE	OCCURENCE	CLASSIFICATION
Birds	Starling	Sturnus vulgaris	Yearlong	Common	
	Yellow Warbler	Dendroica petechia	Migrations-Summer	Common	
	Yellowrumped Warbler	Dendroica coronata	Migrations	Occasional	
	Yellowthroat	Geothlypis trichas	Migrations-Summer	Occasional	
	Yellow-breasted Chat	Icteria virens	Migrations-Summer	Common	
	House Sparrow	Passer domesticus	Yearlong	Common	
	Bobolink	Dolichonyx oryzivorus	Migrations-Summer	Occasional	
	Western Meadowlark	Sturnella neglecta	Yearlong	Common	
	Yellow-headed Blackbird	Xanthocephalus xanthocephalus	Migrations-Summer	Common	
	Red-winged Blackbird	Agelaius phoeniceus	Migrations-Summer	Common	
	Northern Oriole	Icterus galbula	Migrations-Summer	Occasional	
	Brewer's Blackbird	Euphagus cyanocephalus	Migrations-Summer	Common	
	Brown-headed Cowbird	Molothrus ater	Migrations-Summer	Common	
	Western Tanager	Piranger ludoviciana	Migrations	Common	
	Red-shafted Flicker	Colaptes cafer	Yearlong	Common	
	Downy Woodpecker	Dendrocopos pubescens	Migrations	Rare	
	Hairy Woodpecker	Dendrocopos villosus	Migration	Rare	
	Evening Grosbeak	Hesperiphonia vespertina	Winter	Occasional	
	Lazuli Bunting	Passerina amoena	Migrations-Summer	Occasional	
	House Finch	Carpodacus mexicanus	Yearlong	Common	
	Gray-crowned Rosy Finch	Leucosticte tephrocotis	Winter	Rare	

CLASS OR ANIMAL	COMMON NAME	SCIENTIFIC NAME	SEASON OF USE	OCCURENCE	CLASSIFICATION
Birds	American Goldfinch	Spinus tristis	Yearlong	Common	
	Rufous-sided Towhee	Pipilo erythrophthalmus	Migrations-Summer	Common	
	Dark-eyed Junco	Junco hyemalis	Winter	Common	
	Savannah Sparrow	Passerculus sandwichensis	Spring-Summer	Common	
	Grasshopper Sparrow	Ammodramus savannarum	Migrations	Occasional	
	Vesper Sparrow	Poocetes gramineus	Migrations-Summer	Common	
	Lark Sparrow	Chondestes grammacus	Migrations-Summer	Common	
	Black-throated Sparrow	Amphispiza bilineata	Migrations-Summer	Occasional	
	Sage Sparrow	Amphispiza belli	Migrations-Summer	Common	
	Chipping Sparrow	Spizella passerina	Migrations-Summer	Common	
	Brewer's Sparrow	Spizella breweri	Migrations-Summer	Occasional	
	White-crowned Sparrow	Zonotrichia leucophrys	Migrations	Occasional	
	Song Sparrow	Melospiza melodia	Yearlong	Common	
	Eastern Kingbird	Tyrannus tyrannus	Migrations-Summer	Common	
	Western Kingbird	Tyrannus verticalis	Migrations-Summer	Common	
	Ash-throated Flycatcher	Myiarchus cinerascens	Summer	Rare	
	Say's Phoebe	Sayornis saya	Summer	Common	
	Western Wood Pewee	Contopus sordidulus	Migrations-Summer	Occasional	
	Horned Lark	Eremophila alpestris	Yearlong	Common	
	Violet-green Swallow	Tachycineta thalassina	Migrations-Summer	Common	
	Tree Swallow	Iridoprocne bicolor	Migrations-Summer	Occasional	

CLASS OR ANIMAL	COMMON NAME	SCIENTIFIC NAME	SEASON OF USE	OCCURENCE	CLASSIFICATION
Birds	Bank Swallow	Riparia riparia	Migrations-Summer	Common	
	Barn Swallow	Hirundo rustica	Migrations-Summer	Common	
	Cliff Swallow	Petrochelidon pyrrhonota	Migrations-Summer	Common	
	Rough-winged Swallow	Stelgidopteryx ruficollis	Migrations-Summer	Common	
	Black-billed Magpie	Pica pica	Yearlong	Common	
	Common Raven	Corvus corax	Yearlong	Common	
	Common Crow	Corvus brachyrhynchos	Yearlong	Common	
	Black-capped Chickadee	Parus atricapillus	Yearlong	Common	
	Red-breasted Nuthatch	Sitta canadensis	Yearlong	Rare	
	Brown Creeper	Certhis familiaris	Migration	Rare	
	Common Bushtit	Psaltriparus minimas	Winter	Rare	
	Mountain Chickadee	Parus gambeli	Migration	Rare	
	House Wren	Troglodytes aedon	Migrations-Summer	Occasional	
	Long-billed Marsh Wren	Telmatodytes palustris	Yearlong	Common	
	Canyon Wren	Catherpes mexicanus	Yearlong	Common	
	Rock Wren	Salpinctes obsoletus	Yearlong	Common	
	Sage Thrasher	Oreoscoptes montanus	Migrations-Summer	Common	
	Robin	Turdus migratorius	Yearlong	Common	
	Western Bluebird	Sialia mexicana	Migrations	Occasional	
	Mountain Bluebird	Sialia currucoides	Migrations	Occasional	
	Golden-crowned Kinglet	Regulus satrapa	Winter	Rare	

CLASS OR ANIMAL	COMMON NAME	SCIENTIFIC NAME	SEASON OF USE	OCCURENCE	CLASSIFICATION
Amphibians	Long-toed Salamander	Ambystoma macrodactylum	Yearlong	Occasional	
	Great Basin Spadefoot Toad	Scaphiopus intermontanus	Yearlong	Occasional	
	Western Toad	Bufo boreas	Yearlong	Common	
	Woodhouse's Toad	Bufo woodhousei	Yearlong	Common	
	Striped Chorus Frog	Pseudacris triseriata	Yearlong	Occasional	
	Pacific Tree Frog	Hyla regilla	Yearlong	Occasional	
	Leopard Frog	Rana pipiens	Yearlong	Common	
	Bullfrog	Rana catesbeiana	Yearlong	Occasional	
Reptiles	Leopard Lizard	Crotaphytus wislizenii	Yearlong	Common	
	Collared Lizard	Crotaphytus collaris	Yearlong	Occasional	
	Western Fence Lizard	Sceloporus occidentalis	Yearlong	Common	
	Sagebrush Lizard	Sceloporus graciosus	Yearlong	Rare	
	Side-blotched Lizard	Uta stansburiana	Yearlong	Common	
	Short-horned Lizard	Phrynosoma douglassi	Yearlong	Rare	
	Northern Desert Horned Lizard	Phrynosoma platyrhinos	Yearlong	Common	
	Western Whiptail	Cnemidophorus tigris	Yearlong	Common	
	Racer	Coluber constrictor	Yearlong	Occasional	
	Copher Snake	Pituophis melanoleucus	Yearlong	Common	
	Striped Whipsnake	Masticophis taeniatus	Yearlong	Common	
	Western Terrestrial Garter Snake	Thamnophis elegans	Yearlong	Occasional	
—	Western Ground Snake	Sonora semiannulata	Yearlong	Occasional	Sensitive

CLASS OR ANIMAL	COMMON NAME	SCIENTIFIC NAME	SEASON OF USE	OCCURENCE	CLASSIFICATION
Reptiles	Night Snake	Hypsiglena torquata	Yearlong	Occasional	
	Western Rattlesnake	Crotalus viridis	Yearlong	Common	
	Long-nosed Snake	Rhinocheilus lecontei	Yearlong	Rare	
Fish	White Sturgeon	Acipenser transmontanus	Yearlong	Common	Sensitive
	Mountain Whitefish	Prosopium williamsoni	Yearlong	Occasional	Game Fish
	Rainbow Trout	Salmo gairdneri	Yearlong	Occasional	Game Fish
	Chiselmouth	Acrocheilus alutaceus	Yearlong	Common	
	Carp	Cyprinus carpio	Yearlong	Common	
	Peamouth	Mylocheilus caurinus	Yearlong	Common	
	Northern Squawfish	Ptychocheilus oregonensis	Yearlong	Common	
	Longnose Dace	Rhinichtys cataractae	Yearlong	Common	
	Speckled Dace	Rhinichtys osculus	Yearlong	Common	
	Redside Shinner	Richardsonicus balteatus	Yearlong	Common	
	Bridgelip Sucker	Catostomus columbianus	Yearlong	Common	
	Largescale Sucker	Catostomus macrocheilus	Yearlong	Common	
	Mountain Sucker	Catostomus platyrhynchus	Yearlong	Common	
	Brown Bullhead	Ictalurus nebulosus	Yearlong	Common	Game Fish
	Channel Catfish	Ictalurus punctatus	Yearlong	Common	Game Fish
	Pumpkinseed	Lepomis gibbosus	Yearlong	Common	Game Fish
	Warmouth	Lepomis gulosus	Yearlong	Rare	Game Fish
	Bluegill	Lepomis macrochirus	Yearlong	Common	Game Fish

GLOSSARY

Adverse Effect - The effect of any action or undertaking which may damage, or result in the deterioration of a resource or the environment.

Aesthetics - Dealing with the nature of the beautiful and with judgement concerning beauty.

Airspace Closure - Limits the flight of aircraft in the Birds of Prey Natural Area and Study Area from February 1 to September 1, inclusive. No flights are allowed downward from 1,500 feet above the surface of the canyon rim, over the canyon itself and for one-half mile back from the canyon rim in either direction to protect the nesting birds of prey from aircraft harassment.

Algae - Simple plants, many microscopic, containing chlorophyll; forming the base of the food chain in aquatic environments. Some species may create a nuisance when environmental conditions are suitable for prolific growth.

Algal Bloom - Proliferation of living algae on the surface of lakes, streams or ponds; stimulated by phosphate enrichment.

Animal Unit Month (AUM) - The amount of forage required to sustain the equivalent of one cow or five sheep for one month.

Aquaculture - Commercial fish farming.

Aquatic Fauna - Animals growing or living in water.

Aquifer - A water bearing stratum of permeable rock, sand or gravel.

Artifact - Any object made, modified, or used by man.

Carey Act - This act was passed on August 18, 1894 and was intended to encourage reclamation and settlement of desert lands. Under the law, the Secretary of Interior is authorized to grant up to one million acres to states containing desert lands. Amendments later increased this authorization to three million acres for Idaho. The state patents lands in 160-acre parcels to actual settlers on the land. While there is no charge to states for these lands, the states may require settlers to pay certain fees.

CFS - Cubic feet per second, a measure of the amount of water passing a given point.

Cultural Resource - Those non-renewable, fragile and finite remains of human activity, occupation and endeavor as reflected in districts, sites, structures, artifacts, objects, ruins, works of art and architecture or documentation.

Desert Land Act (DLA) - This act was passed in 1877 and has been amended a number of times. It allows a state resident to file on up to 320 acres of public land. DLA applications are filed singly or in group project proposals similar to the Carey Act. There is an initial \$10 filing fee plus 25¢ per acre deposit towards purchase price. One dollar per acre per year for three years must be expended towards development of the land. At final proof, the applicant pays \$1 per acre plus proof-taking costs of about \$25. Patent applications, subject to time extension for certain cases, are to be filed within four years after entry is allowed, and water must be available to all irrigable portions of the entry. At least one-eighth of the entry is to be cultivated at the time of patent application. The DLA does not require an entryman to build a home on the farm unit. The BLM has administrative control of the land under a DLA filing until patent is issued.

Ecosystem - Complex self-sustaining natural system which includes living and non-living components of the environment and the interactions that bind them together. Its functioning involves the circulation of matter and energy between organisms and their environment.

Endangered Species - A species of fish, wildlife or plants found by the Secretary of Interior to be threatened with extinction because its habitat is threatened with destruction, drastic modification or severe curtailment, or because of over-exploitation, disease, predation or other factors. Its survival requires assistance.

Federal Land Policy and Management Act of 1976 (FLPMA) - This act organizes, for the first time, the duties and functions of the Bureau of Land Management and provides a basic mission and an adequate authority for effective management of these lands. The Act clearly states that retention of public land, rather than disposal is the emphasis of management. As clearly stated in Section 102 of the Act, "The Congress declares that it is the policy of the United States that . . . the public lands be retained in Federal ownership, unless as a result of the land use planning procedure provided for in this Act, it is determined that disposal of a particular parcel will serve the national interest . . ."

Fledge - To raise a young bird until it is able to fly.

Forage - All browse and herbaceous food that is available to livestock or game animals, used for grazing or harvested for feeding.

Game Animals - Those wildlife species which are legal for sport hunting as deemed by the State Department of Fish and Game. The animals are of significant economic importance to the state due to their monetary return via license fees, taxes, etc.

Geothermal - Pertaining to the earth's internal heat. Geothermal resources refers to natural hot water or fluid, natural steam or naturally hot rock.

Geothermal Leasing Act of 1970 - Authorizes the Secretary of Interior to issue leases for the development and utilization of geothermal steam and associated geothermal resources on lands administered by him, including public, withdrawn and acquired lands.

Historic Resources - All evidences of human activity that date from historic (i.e., recorded history) periods. Historic resources are cultural resources and may be considered archaeological resources when archaeological work is involved in their identification and interpretation.

Hydropower (hydroelectric) - Refers to electricity generated by water power.

Management Framework Plan (MFP) - A planning decision document which establishes, for a given area of land, land use allocations, coordination guidelines for multiple use, and objectives to be achieved for each class of land use or protection. It is the BLM's Land Use Plan.

Mineral Leasing Act of 1920 - Allows the Secretary of Interior to lease certain minerals like oil and gas, coal, phosphate and oil shale at his discretion.

Mining Law of 1872 - a non-discretionary law that standardized procedures for filing a mining claim, proving up on the claim and gaining patent to the claim for lode or placer minerals.

Mitigation - The reduction or elimination of damages to an environmental resource.

Multiple Use - Harmonious and coordinated management of the various surface and subsurface resources, without impairment of the land, that will best meet the present and future needs of the people.

National Advisory Council on Historic Preservation - A council established pursuant to Title II of the National Historic Preservation Act of 1966. Under the provisions of Section 106 of NHPA, the Advisory Council must be afforded an opportunity to comment on Federal, Federally assisted, or Federally licensed undertakings which may affect properties listed in or eligible for listing in the National Register of Historic Places.

National Environmental Policy Act of 1969 - The purposes of the Act are to declare a national policy which will encourage productive and enjoyable harmony between man and his environment, to promote efforts which will prevent or eliminate damage to the environment and biosphere, and stimulate the health and welfare of man, to enrich the understanding of the ecological systems and natural resources important to the nation, and to establish a Council on Environmental Quality. It is the continuing policy of the federal government, in cooperation with state and local governments and concerned public and private organizations, to use all practicable means and measures to create and maintain conditions under which man and nature can exist in productive harmony and fulfill the social, economic and other requirements of present and future generations of Americans.

National Register of Historic Places - The official list, established by the Historic Preservation Act of 1977, of the Nation's cultural resources worthy of preservation. The Register lists archaeological, historic and architectural properties (i.e., districts, sites, buildings, structures and objects) nominated for their local, State, or national significance by State and/or Federal agencies and approved by the National Register staff. The Register is maintained by the Heritage Conservation and Recreation Service.

Non-game Animals - Not legal for sport hunting and are generally protected. They are primarily comprised of rodents, shore birds, raptors and song birds. These animals provide non-consumptive type enjoyment for many people.

Off-Road Vehicle (ORV) - Any motorized vehicle designed for or capable of cross-country travel on or immediately over land, water, sand, snow, ice, marsh, swampland or other terrain.

Paleontological Resource - Cultural values dealing with the life, ancient forms, and conditions of past geological eras as known from fossil remains.

Particulate Matter - Finely divided solid or liquid particles in the air or in an emission. Particulates include dust, smoke, fumes, spray and fog.

Penstock - A conduit for conveying water to a water wheel or turbine.

Perennial - Having a life cycle lasting more than two years.

Physiographic - The systematic description of nature in general.

Planning Unit - A geographic area within a BLM District used for assembling resource inventory data.

Prehistoric Resources - All physical evidence of past human life or activities that represent aspects of a time prior to the written history of an area.

Prey - An organism killed and at least partially consumed by a predator.

Prey Base - The collection of prey species in an area that are used as a food source for a predator or a group of predators.

Riparian Zone - Referring to the land bordering a stream, river or lake.

Sedimentary Deposits - Any usually finely divided organic and/or mineral matter deposited by air or water in non-turbulent areas.

Sensitive Species - Animals classified by the BLM and Idaho Fish and Game Department are those: 1) not yet officially listed but which are undergoing a status review or are proposed for listing according to Federal Register notices published by the Secretary of the Interior or the Secretary of Commerce, or according to comparable State documents published by State Officials; 2) whose populations are consistently small and widely dispersed, or whose ranges are restricted to a few localities, such that any appreciable reduction in numbers, habitat availability, or habitat condition might lead toward extinction; and 3) whose numbers are declining so rapidly that official listing may become necessary as a conservation measure. Declines may be the cause of one or more of several factors including: destruction, modification, or curtailment of the species' habitat or range; overutilization for commercial, sporting, scientific, or educational purposes; disease or predation; the inadequacy of existing regulatory mechanisms; and/or other natural or manmade factors adversely affecting the species' continued existence.

Sikes Act - Public Law 93-452, passed by the United States Congress on October 18, 1974, directs the Secretary of Interior to cooperate with the State wildlife agencies in the planning, development, maintenance and coordination of comprehensive plans for the conservation and rehabilitation of fish and wildlife resources.

Site - A physical location where human activities or events transpired. The location of an event, activity, building structure, or object.

Socio-Cultural - The interaction of social and cultural factors.

State Historic Preservation Officer (SHPO) - The official within each State, authorized by the State at the request of the Secretary of the Interior, to act as a liaison for purposes of implementing the National Historic Preservation Act of 1966.

State of Idaho Admissions Act - Upon gaining statehood, Idaho was given sections 16 and 36 within each township. Some of these sections were withdrawn and unavailable due to National Park or Forest Service status. The above Act allows the State to select other federal lands amounting to the same acreage, in lieu of the unavailable lands.

Sustained Yield - The achievement and maintenance in perpetuity of a high-level annual or regular periodic output of the various renewable resources of the public lands consistent with multiple use.

Taylor Grazing Act of 1934 - Implemented to stop injury to the public grazing lands by preventing overgrazing and soil deterioration. It authorized the Secretary of Interior to manage the public rangelands.

Threatened Species - Any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range, and which has been designated in the Federal Register by the Secretary of Interior as a threatened species.

Turbidity - The cloudy condition caused by suspended solids in a liquid.

Upper Sonoran Desert Life Zone - The Upper Sonoran Desert Life Zone represents one particular band of vegetation which runs across North America from south to north or from low altitudes to high. Life zones generally lie above one another at successively cooler temperature belts. Some plants which typify this life zone include greasewood, saltbrush, rabbitbrush and sagebrush.

Visual Resource - The land, water, vegetation, animals and other features that are visible on all public lands.

Wilderness Act of 1964 - Established a National Wilderness Preservation System to be composed of federally owned areas designated by Congress as wilderness areas.

Withdrawal - An action, approved by the Secretary, which segregates public lands from specific land uses. A withdrawal under Section 204 of FLPMA may only segregate the lands from non-discretionary land laws such as the 1872 Mining Law.

REFERENCES

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Summary of Provisions Suggested for Inclusion in a
Birds of Prey National Conservation Area Bill

It is proposed to submit to the Congress for its consideration a bill that would establish the Snake River Birds of Prey National Conservation Area. This would be accomplished by an amendment to Title VI of the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1701 et seq.). The purpose of the legislation would be to protect the ecosystem of the Snake River Birds of Prey Area which is essential to the maintenance of the raptor population and its prey base. The legislation would be a recognition that the public lands in Idaho comprising the Snake River Birds of Prey Area contain the densest known nesting population of eagles, falcons, owls, kestrels, hawks, and other birds of prey (raptors) in North America.

The proposal would also provide for the development and use of the other resource values of the Area under a multiple use and sustained yield concept. The Area would be administered by the Secretary of the Interior through the Bureau of Land Management. The Secretary would continue to implement a management plan for the Area to protect and enhance the raptors and their habitat. Partial or complete temporary closures of all or portions of the Area, including closure of airspace, and issuance of permits containing appropriate conditions for activities within the Area would be among components of the plan.

The management plan would include special management protection for the raptor habitat within the Area, including:

- provisions for the public use of such lands;
- provisions for acquisition of lands comprising the raptor habitat within the boundaries of the Area;
- the identification of withdrawals, and initiation of action to modify or revoke such withdrawals that are no longer needed in the Secretary's view;
- provisions for the development of procedures by which plans, activities, programs and policies of Federal, State, and local governments in the Area can be coordinated;
- provision for education and research in the Area; and
- a provision for a program of continued scientific investigation and study to support the sound management of the Area.

The management plan would be required to be maintained and revised as the Secretary deems necessary to carry out the purposes and provisions of the bill.

The bill would also give the Secretary authority to issue regulations necessary to implement its provisions with regard to management, uses and protection of the public lands within the Area. Penalties for violations of such regulations would also be provided. The Secretary could also delegate limited enforcement responsibilities to certain designated personnel and appropriate State or local officials without granting such

personnel and officials the authority to carry firearms. Nothing in the bill would supersede or otherwise affect administration of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.).

Subject to valid existing rights, the Area would be withdrawn from operation of the Mining Law of 1872, as amended and supplemented (30 U.S.C. 22 et seq.). Minerals that would ordinarily be subject to disposal under the Mining Act of 1872 or any other law applicable to such minerals in the future could be disposed of by lease by the Secretary. Such leases, or any leases issued under the Mineral Leasing Act of 1920, as amended and supplemented (30 U.S.C. 181 et seq.), the Acquired Land Mineral Leasing Act (30 U.S.C. 351 et seq.) or the Geothermal Steam Act of 1970 (30 U.S.C. 1001 et seq.) would be required to contain such stipulations and conditions as the Secretary deems necessary to protect the raptor habitat, and scenic, scientific, and other environmental value of the public lands of the Area.

Subject to valid existing rights, the Area would be withdrawn from entry, application, or selection under the Desert Land Act (43 U.S.C. 321 et seq.), the Carey Act (43 U.S.C. 641), the State of Idaho Admissions Act (26 Stat. 215), Revised Statute section 2275, as amended (43 U.S.C. 851), and Revised Statute section 2276 as amended (43 U.S.C. 852). However, agricultural use and development within the Area could be permitted pursuant to section 302 of FLPMA and in accordance with the required management plan.

To assure that other Federal activities are administered consistent with the management of the Area, no Federal funds would be expended and no guarantee, license, approval, project, program, or activity of any description that would affect the lands, waters, or other resources located within the Area would be allowed if, in the judgment of the Secretary, it would be inconsistent with the management of the Area for the purposes and policies of this bill. The Secretary would be authorized to issue procedures requiring other Federal departments and agencies to supply information to him to enable him to determine whether a proposed activity is consistent with the management of the Area.

The bill would also provide for continued use of the Area by the Idaho National Guard, provided such use is compatible with the policies and purposes of the bill. The Secretary would also be required to provide for visitor use of the Area consistent with protection of the raptors and the raptor habitat within the Area.

Further, the Secretary would be authorized to exercise the power of eminent domain to acquire lands within the Area that he determines are essential raptor nesting habitat. Lands owned by the State of Idaho within the Area could only be acquired by sale, donation or exchange. The Secretary would also be authorized to use monies from the Land and Water Conservation Fund for such acquisitions.

Finally, the Secretary would be authorized to enter into cooperative agreements and contracts with State and local governments providing for such governmental services as he deems necessary to carry out the purposes and policies of the bill.

Definitions of essential terms and appropriation provisions would also be included in the bill.

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